#### Supplement to the

# Appendix to the Journal of the Assembly

LEGISLATURE OF THE STATE OF CALIFORNIA
1967 REGULAR SESSION

#### **REPORTS**

January 2, 1967-September 8, 1967



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HON GEORGE ZENOVICH Majority Floor Leader HON CARLOS BEE Speaker pro Tempore

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Volume 19, Number 15-Protective Services for Children

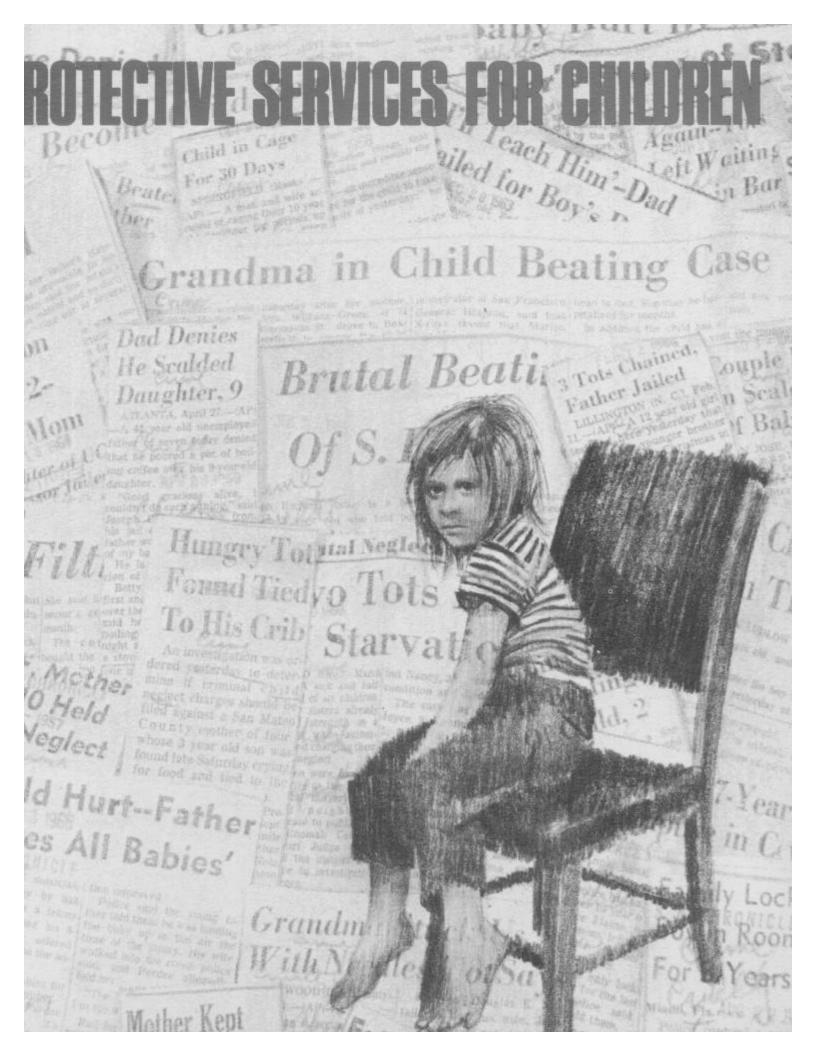
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JACK T. CASEY

February 3, 1967

Honorable Jesse M. Unruh Speaker of the Assembly, and

Honorable Members of the Assembly State Capitol Sacramento, California

Gentlemen:

The Assembly Interim Committee on Social Welfare submits herewith its report to the Legislature on 1965-67 Interim studies. This report is devoted to the following subject:

Protective Services for Children

The attached report presents a brief review of each problem and sets forth the general conclusions and recommendations of the Committee for the legislation which seems indicated. These conclusions and recommendations are the result of public hearings and additional research conducted during the interim period.

Respectfully submitted

Jack T. Casey, Chairman William F. Stanton, Vice Chairman

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<sup>\*</sup> Reservations

### PROTECTIVE SERVICES FOR CHILDREN

Today we see that opportunity for the full development of each child's personality is not only a test of democracy, but also is the most important means we have for its preservation and further development. This can be accomplished only through a personal dedication on the part of all citizens and an outpouring of personal and material resources for advancing our understanding of and service to children, beyond anything hitherto achieved in any country. In such a mobilization there must be the fullest possible utilization of all existing resources, both public and private, far greater development than we now have of citizen responsibility and citizen participation, and cooperative planning of a high order for the extension of such services and programs as may be required to assure every child his fair chance in the world.1



<sup>1</sup>Lenroot, Katharine, *The Social Welfare Forum* (National Conference of Social Work, 1950), pp. 187, 8.

### INTRODUCTION

This report grows out of a public hearing held on August 13, 1965 by the Assembly Interim Committee on Social Welfare on the topic of child protective services. Since that time, the Committee staff has been engaged in further research on the points raised during the hearing. This report is an attempt to bring together the facts and issues revealed at the hearing, the problems according to the current literature in the field, and the conclusions of the Committee.

For additional information, the interested reader is referred to the bibliography at the end of this report and to the full hearing transcript, which is available at the Committee office.

This report is organized into two major sections. Part I is concerned with demonstrating the need for child protective services. It discusses the incidence of child neglect and abuse, the differences between neglect and abuse, and the characteristics of parents who mistreat their children.

Part II defines protective services, examines the legal rights of parents and children, and gives the Committee's findings and recommendations for legislative action. No attempt is made to give a detailed administrative blueprint, rather the provision of broad policy guidelines is the major objective of this report. Actual examples of child neglect and abuse are used to demonstrate the reality, urgency and complexity of the problems which a protective services program is designed to solve.

The twenty witnesses, representing a variety of specialties, who appeared before the Committee all strongly and urgently supported legislation in the protective field. The studies which have been made, including that of the California State Social Welfare Board and the recommendations in CAL-FLEX, unanimously point out the need and justification for a statewide child protective service program.

### PROTECTIVE SERVICES FOR CHILDREN

#### Report of the Assembly Interim Committee on Social Welfare

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William F. Stanton, Vice Chairman

Robert E. Badham

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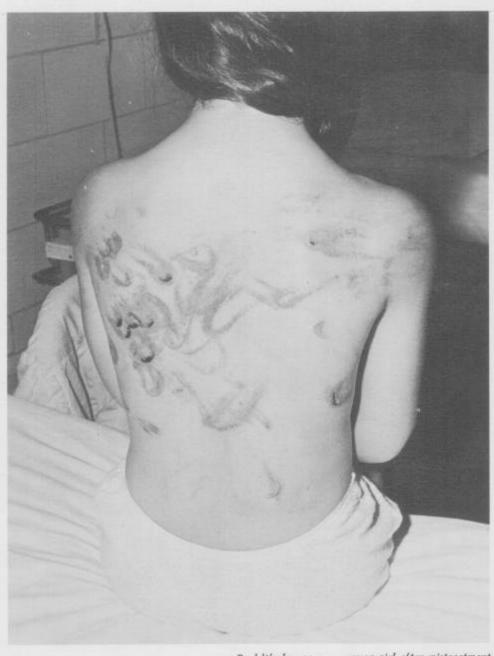
James Driscoll Chief Clerk

January 1967

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## PART 1: THE CHILD IN NEED OF PROTECTION



Real life borror . . . young girl after mistreatment

### The Child in need of Protection

Two small children quarrel fretfully in a filthy room, while their baby brother lies wet and listless on a bare, stained mattress. Their older sister comes in carrying a bag of potato chips and for a few moments, there is the noise of children arguing over food. Their mother will not be home until the early hours of the morning and when she comes, she is likely to be drunk. Their father is a stranger to them. They lived a cold, lonely, uncertain existence.

In another neighborhood, a six year old boy quietly enters his front door after school. His mother greets him with a blow on the chin which knocks him across the room. He makes no sound; experience has taught him better. His mother, standing in the middle of a precisely ordered living room, glares at him: "You're ten minutes late! Were you looking for trouble, something to steal maybe? I'll teach you to disobey me!" The boy has no defense. He is silent, trying to shut out the real world by escaping into a world of fantasy.<sup>2</sup>

Are these children fictional characters or, at worst, mere statistical rarities? By no means. They are the children of neglect and abuse who often live hardly noticed among the bulk of happy children. Sometimes neighbors, relatives, or the school will be aware that something is wrong, but frequently no one is concerned until a crisis or death brings the situation to public notice. Most people find the idea of harming one's own children so repugnant that newspaper accounts of child murder or semistarvation are dismissed as exceptional occurrences, as isolated incidents which never happen in one's own community. Sensitivity to family privacy and a desire not to get involved prevent people from noticing signs of the neglect and abuse of children.

When neglected and abused children do become visible to the community, this happens in a variety of ways. The most dramatic, and most rare, is when a child is actually burned, beaten, or starved to death and the police arrest the parents. The following are more common examples:

Seven year old Michael is a source of great concern to his grandmother who has observed his mother administer excessive, erratic beatings, then shower him with gifts. He is having difficulty in school and has twice run away to his grandmother's house, begging her to let him stay. Six months old Susie is brought to the hospital with body bruises and a broken arm which, her mother explains, resulted from a fall from her high chair. X-rays reveal other partially healed breaks which the mother does not mention, causing the examining doctor to suspect that the injuries were not accidental.

Johnny is frequently absent from school. When he does come, both his body and his clothing are filthy. The school representative who visits the home is confronted with an appalling odor, filth, and disorder. Two preschoolers are seen eating cold leftover food out of its original tin.

Mrs. B. committed suicide two months ago, leaving her husband and four children. Mr. B. is determined to keep the children and has had several inadequate housekeepers, one of whom actually mistreated the youngsters. Mr. B. quit his job and decided to stay home with the children himself. He has now applied for financial assistance.

Three small children are stranded with their parents in a broken down car in a service station. The manager calls Travelers' Aid because the children look so poorly cared for and because he has overheard the father offering to give the youngest to a station employee.<sup>3</sup>



See Young, Leotine, Wednesday's Children (New York: Mc-Graw-Hill, 1964) for similar examples.

\*These examples are based on examples given in Planning for the Protection and Care of Neglected Children in California, Final Report of a Study by National Study Service (Sacramento: State Social Welfare Board and California Delinquency Prevention Commission, August, 1965) p. 4.

### **Defining Neglect and Abuse**

The line between neglect and abuse is sometimes difficult to draw, but the two can generally be distinguished in the following way. The neglectful parent usually does not consciously intend to harm his child, but through failure to meet the child's health, nutritional, comfort, and emotional needs, he exposes the child to severe risks. Testimony before the Committee gave some examples of neglect, such as the father who left his four small children alone in a car with a book of matches. Although nothing happened to them, he was charged with neglect. One month later, he left two of the children alone in the car. One, a little girl, lit some matches and died subsequently of burns. Many parents may leave children alone at a time of emergency or under unusual circumstances, but it is those parents who habitually leave their children alone who expose them to the greatest risks.

Living requires some exposure to risks. The more serious the risk, the longer and more repeatedly the child is exposed to it, the greater is the neglect. In some cases of neglect, such as feeding, an occasional missed meal is no great cause for concern, but continual failure to feed children results in malnutrition or starvation. Besides failure to feed, neglect includes leaving children alone, maintaining them in an unsanitary condition, keeping them out of school, failing to keep them clean and adequately dressed, and ignoring their medical needs. As in the case of feeding, concrete circumstances and conditions determine the existence and extent of neglect. A parent who leaves his children in a parked car for a few moments while he runs in to buy a package of cigarettes would not be considered neglectful according to prevailing community standards. But a parent who leaves his children in the car all day, particularly if they are very young and the sun is hot or there is a great deal of traffic, is probably neglectful, since the likelihood of harm over the long run is very substantial. A parent who sends his six year old child out to play during the day is not neglectful, but if he locks his three year old out at night, especially in winter, he is being neglectful.

Most neglectful families show neglect in a variety of ways. A young Sacramento mother, whose husband was imprisoned on a narcotics violation, was overwhelmed with the care of five little boys, the oldest of whom was five. She sat watching television all day long, while the boys defecated, vomited, and urinated



Filth goes with neglect

in the house, tracked mud in with their bare feet, and fed themselves uncooked maggoty oats from a bag in the kitchen cupboard. When a complaint brought a probation officer to the scene, she found the boys filthy, emaciated, and covered with sores, the house overrun with insects and vermin, and an unbearable stench permeating the atmosphere. On the basis of the combination of circumstances, the situation was classified as one of general neglect. It was the extreme conditions in the home, the evidence of the duration of these conditions for a considerable period of time, and the very youthful age of the children which defined the circumstances as neglect.

#### Abuse Varies

In contrast to the neglectful parent, the abusive parent intends to harm his child and does so by overt action. Sexual assault, mutilation, tying up in a dark closet—these are examples of abuse.

The literature on abuse shows that children may be beaten with ironing cords, sticks, wires or lead pipes. They may be tortured with lighted cigarettes, scalding water, or hot stoves. Beloved pets may be tormented and killed before their eyes and the children threatened with the same fate. Parents have twisted their offsprings' arms and legs until they broke, slammed them against the wall until their skulls were fractured, and even bitten them.

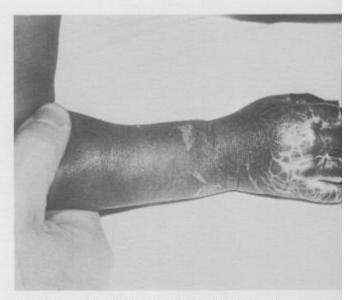
The forms of abuse inflicted on children are a negative testimony to the ingenuity of man. Pool cues, baseball bats, TV aerials, rubber hoses, and oars have been used as battering instruments. Children have been gassed, given electric shocks, buried alive, drowned in bathtubs, and suffocated with plastic bags or pillows.<sup>4</sup>

Ninety percent of abusive parents show no remorse. They blame their children for being "monsters," "idiots," or "crazy." Often one child is singled out as a scapegoat. One abusive father shaved his son's head and referred to him as "the criminal." Still other parents give seemly irrelevant reasons for attacking their children; "He was washing a milk bottle," might be offered as an excuse for knocking a youngster to the floor.

The intensity of the activity helps define it as abuse. A parent may habitually spank a child without this constituting abuse, as long as injury does not result. Of course, the child may suffer emotionally in such a situation, which brings us to another category, not currently covered in the law, the category of emotional abuse or neglect.

#### Emotional Mistreatment

One of the witnesses before the Committee, Los Angeles Police Sergeant Shirley Maxwell, gave an ex-



A band, burned. Victim: 20-month-old "battered" girl

ample of emotional neglect. "There is one other type of case that we have many, many of in the police department where the parent is a borderline mental patient, but not enough to be committed. They get along. The father has some mediocre job, the mother just managing to get the dishes done and sweeping the floor, yet they are peculiar in their thinking. It is not enough for the police department to do anything. We cannot motivate them to go to a social agency for help. This type of case comes to our attention because somebody will call in and say, 'Oh, I feel so sorry for those children, the mother wears sun glasses in the house all day long, and she wears long, raggedy skirts, and she never comes out of the house, she is like a recluse. One neighbor kid went in there and there are boxes and stuff piled all over the place.' The children have no hope of a normal life to go by. This is the kind of case that we can't do anything about because we cannot work with those parents. They won't be motivated to go to a social agency for help, but the protective services can go in and at least help them with a homemaker or something."

Other examples of mistreatment which could be placed in the emotional category are where a mother dressed her son as a girl and gave him a girl's name or where a stepfather habitually wore his teenage daughter's clothing, including their lingerie, much to their confusion and embarrassment.

<sup>&</sup>lt;sup>4</sup>DeFrancis, Vincent, Child Abuse—Preview of a Nationwide Survey (Denver: American Humane Association, 1963) pp. 5, 6.

### Measuring the Incidence

Testimony before the Committee indicated that neglect is about two to three times as frequent as abuse among situations coming to the attention of the police.

The actual extent of neglect and abuse among children is difficult to measure, since there are few programs in existence to deal with the problem and since there is no precise definition. A by-product of a child protective services program should be better classification and reporting of the mistreatment of children.

It should be noted in this regard that the Children's Bureau of the Department of Health, Education, and Welfare is currently supporting an epidemiologic study of child abuse at Brandeis University. Three California cities-Los Angeles, San Francisco, and San Mateo-will be involved in the study. Cases from these three areas will be examined on a selective basis. In addition, there will be a Statewide tabulation of the reports of suspected child abuse now being sent to the Bureau of Criminal Identification and Investigation. These reports are the result of AB 277, passed by the 1965 Legislature, which makes it mandatory for doctors to report to law enforcement agencies any injuries to a child which do not appear accidental. The reports are then forwarded to the Bureau of Criminal Identification and Investigation. These cases are not currently being reported to CII by the State Department of Social Welfare because of the lack of a protective services program to do follow up. The Brandeis study should be helpful in determining the incidence in California of the various types of mistreatment suffered by children at the hands of their parents.

Until such time as more detailed studies, like the Brandeis study, are completed, estimates of the extent of the problem must be based on incomplete information. But even on the basis of current information, it can be said with certainty that child neglect and abuse occurs with considerable frequency. The Encyclopedia of Social Work estimates that each day 200,000 children in the United States need protective services. More careful study will probably show that we have under- rather than overestimated the extent of child neglect and abuse.

Neglect is particularly hard to estimate. For the 12 month period ending June 30, 1964, there were between 40,000 and 45,000 dependent and neglected children known to California probation departments and



the Juvenile Court. These are cases where the neglect is severe enough to warrant legal attention. It has been estimated that for every one of these, there is a similar case in an earlier stage of development which will become serious enough to necessitate legal intervention later on.5

#### Difficult to Judge

Each year in California, the police record the names of 300,000 to 350,000 juveniles, not including traffic cases. In most of these cases, nothing is done beyond on-the-spot warning or counseling by the police officer. It is impossible to estimate how many of these dismissed children would fall into the category of children needing protection, but it is reasonable to assume that it would be a substantial number. It is not always easy to draw the line between neglected and delinquent children. A significant number of youngsters picked up by police for "delinquent tendencies," which include truancy from school, running away, incorrigibility, and possession of alcohol, could just as appropriately have been given the neglect label, since the delinquent acts reflected parental inadequacy or lack of concern.

Over 50% of all juvenile arrests are for "delinquent tendencies," rather than for violations of adult law. Whether a child is deemed to be "delinquent" rather than "neglected" is primarily a matter of age. In 1964, 86% of children declared dependent children of the Court were under 14 years of age, while 80% of all delinquent children were 14 and over. Many of the delinquent teenagers "are the same youngsters who might have been identified as children receiving borderline family care in their younger years, if the community had been alert to the signs of child neglect".6 Recognition of this fact implies a need for an agency which can assume responsibility and supply services for the many neglected children who are now defined as delinquents.

Although many, perhaps even the majority, of children in need of protection eventually come in contact with the police, such children are also discovered by other agencies. Of 107,174 families receiving public assistance, fully 10,752, or 10%, have one or more children identified by the social worker as needing protection.7 Although child neglect is not limited to any particular economic or social class, public assistance recipients are a particularly vulnerable group because of economic deprivation, inadequate housing, and family breakup.

Another source of discovery of children in need of protection is the school system. Most estimates place the number of children with behavioral and emotional

handicaps at between 5% and 10% of the State's total school population of over 4 million.8 A survey of school districts around the State showed estimates of child neglect ranging from 2% to 50%.9

Whatever the actual incidence, the numbers of neglected children seem to be growing, both absolutely and in proportion to the population. Statistics released from various social agencies seem to substantiate this fact. 10 The 1965 report of the San Mateo County Probation Department cited these figures: "New referrals involving dependency and neglect increased during 1965 over our experience in 1964. There were 633 new referrals received during the year compared to 557 referrals in 1964. The difference represented a 12% gain in new referrals involving dependency and neglect." 11 It must be remembered that these were probably fairly severe cases of neglect, sufficient to warrant probation department attention.

While estimates of child neglect in California may vary from 22,000 to 500,000,12 according to the scope of the definition used, the estimates of abuse vary also, but in a smaller range. With very incomplete reporting services, the known number of beaten and battered children is about 10,000 annually in the nation as a whole, or at least 1,000 in California. In the City of Los Angeles in 1964, there were 162 serious child beating cases; in 1963, there were 169, including 13 deaths.

In 1961, Dr. C. Henry Kempe, Pediatrics Chairman at the University of Colorado Medical Center, helped focus attention on child abuse when he coined the now well-known term "the battered child syndrome." Seventy-one hospitals surveyed by Dr. Kempe reported treating 302 cases of serious child abuse in a year, 33 of these children died and 85 suffered permanent brain damage.13

Due to Dr. Kempe's efforts, more cases of child abuse are now being recognized. As physicians become in-

1bid., p. 6

Elmott, Criner and Wagner, The Troublesome Ten Percent (Santa Barbara: City Schools, 1961).
Stennett, R. G., "Emotional Handicap in the Elementary Years Phase or Disease?" American Journal of Ortho-

psychiatry (April, 1966) pp. 448, 449.

National Study Service, op. cit., p. 13.
Nyden, Paul, "The Use of Authority," Public Welfare (July, 1966) p. 241.

"San Mateo County, Report of the Probation Department,

1965, p 1.

<sup>12</sup> National Study Service, op. cit., p. 21.

<sup>18</sup> Kempe, C. Henry, "The Battered-Child Syndrome," The Journal of American Medical Association (July 7, 1962) pp 17-24

<sup>&</sup>lt;sup>6</sup> National Study Service, op. cit., p. 9.

Bower, Eli, The Education of Emotionally Handicapped Chil-



Broken bones and scars. Hands of an abused 14-year-old girl

creasingly aware of the problem, as X-ray techniques continue to improve the ease of diagnosis, and as the evidence from California's reporting statute builds up, it may be possible to obtain a more reliable measure of the actual incidence of child abuse. Medical experts suspect that many of the so-called accidental deaths of children are due to mistreatment or, at least, to parental carelessness and disregard. The report of the American Medical Association, July, 1962, stated of parental abuse, "It is likely that it will be found to be a more frequent cause of death than such well recognized and thoroughly studied diseases as leukemia, cystic fibrosis, and muscular dystrophy, and it may well rank with automobile accidents."

Most studies of cases of child abuse reveal that the children involved are proportionately young. This is understandable, since young children are relatively incapable of self-defense, more vulnerable to injury, less likely to be in contact with outsiders, and more likely to be a parental burden and irritant than older children.

#### 90% Under 10

The Children's Division of the American Humane Association did a study of 662 cases of child abuse reported in newspapers in 1962. Ninety percent of the children were 10 years of age or younger. The majority, fifty-five percent, were under four. Nearly one child in every four died as the result of parentally inflicted injuries and of those who died, over 80% were children under four.<sup>15</sup>

In a Kansas study, out of 85 known cases of child abuse, most were children under three and one third were under six months. Fourteen deaths occurred—all of children under four years.<sup>16</sup>

In the first nine months of Illinois' reporting law, 363 suspected victims of abuse were found. The majority, 247, were under five, 99 were under one year, and 59 were under six months.

A member of the medical profession suggests that physicians should be alert not only to the battered child syndrome, but to the less obvious indications of neglect, which he includes with abuse under the broader title of "maltreatment syndrome". 17 He urges physicians to be sensitive to the parental characteristics of rigidity, compulsiveness, immaturity and lack of warmth toward the child. He feels that if physicians will report the early signs of neglect and abuse to a social agency (assuming that an appropriate agency exists), further damage to the child can be prevented.

European countries are also becoming increasingly aware of the problems of child abuse. West Germany has a reporting statute similar to California's.

<sup>&</sup>quot;Children's Division, The American Humane Association,
Protecting the Battered Child (Denver, 1962).

"Rubin, Jean, "The Need for Intervention," Public Welfare

Rubin, Jean, "The Need for Intervention," Public Welfare (July, 1966) p. 231.
 Fontana, Vincent, "An Insidious and Disturbing Medical Entity," Public Welfare (July, 1966) pp. 236-7.

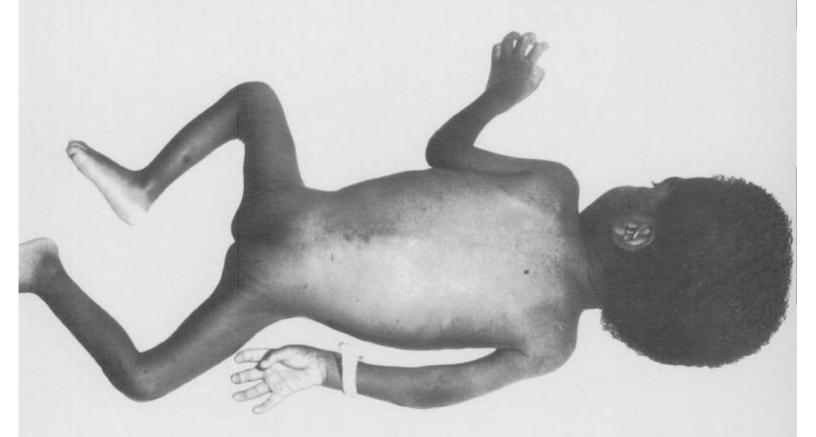
### **Beginnings of the Child Protective Movement**

Child neglect and abuse have probably always existed. The definition of child neglect and abuse has changed over the years, along with society's changing expectations of parents and the rising standard of living. Still, examples compiled a century ago show a striking parallel with those of modern times. The nineteenth century child victims were beaten by their parents, starved, chained to bedposts, sexually assaulted, and kept in filth. The abusive and neglectful parents were described as lazy, drunkards, hot-tempered, and erratic in the reports of that time.

Although family and community ties may have been firmer in the last century, children had fewer rights. It was an era when youngsters were exploited by theatres, circuses and traveling road shows, or were made to work long hours in industry. Children were a burden in the growing cities, where poor families, many of them immigrants, struggled for survival. Infants were frequently abandoned and allowed to starve. The mistreatment of children is not unique to modern times.

Over one hundred years ago, the Saint Vincent's Foundling Hospital was established in New York City for the purpose of protecting abused and abandoned infants. Sixty-one percent of the infants admitted in the first year of operation were dying and, as late as 1892, 200 foundlings and 100 dead infants were found on the streets of New York.

The movement to establish children's legal rights to protection from parental abuse can be said to have begun in 1874 in New York City. In that instance, there occurred the brutal abuse of a little child who, in the absence of laws protecting children, was rescued under the statute providing protection for animals. As a result of the great publicity given this case, the New York Society for the Prevention of Cruelty to Children was formed, the first such society in the world. In 1875, the first anticruelty case against a parent was initiated by the Society and prosecuted in the New York City Courts. This was the first time a child was protected in his own right, without recourse to the statute providing protection for animals.



21 months old. Description: Malnutrition, neglect

### **Characteristics of the Parents**

Probably many of the 19th century's inhumane parents are the great-grandparents of today's abused and neglected children. A study of parents who mistreated or neglected their children showed that over half of them came from homes where they were ignored or harmed, homes exactly like those they were providing for their own children.<sup>18</sup>

More than one-fifth of the remaining parents were not physically harmed as children, but they were severely rejected emotionally by their own parents. Many of these grew up in institutions or foster homes. Of all the parents in the study, only 3% had any positive relationship with a parent or relative and any pleasurable memories of childhood.

The lesson of the study seems obvious. People learn to be parents from their own parents. Those who have suffered at the hands of their parents often pour out their resentment on their own helpless offspring. Even where they might want to do differently, many of these inadequate parents simply have not been exposed to more appropriate alternative childrearing methods. Over half the unsatisfactory parents had alcoholic problems. Poor health was a frequent complaint among them, but whether this was a cause of parental inadequacy or a result of failure to observe rules of health and hygiene is not known. Mental retardation was higher among the parents tested than among the general population.<sup>19</sup>

Many abusive and neglectful parents are borderline psychotics or severe neurotics. Usually their symptoms are not sufficiently marked to put them in the category of the mentally ill. A person who says that he hears a voice telling him to kill is clearly mentally ill. But what about a parent who views his three month old baby as a horrible monster, out to take over his life? He may throw the baby on the floor and kick him, but when brought to Court, give a rational story about having lost his temper. Often such a person can hold a 10b or keep a house clean.

A review of many cases has indicated that abusive parents frequently exhibit an episodic type of psychosis characterized by outbursts of rage.<sup>20</sup> The persons who gave vent to these outbursts often exhibited such positive characteristics as the ability to handle money, hold a job, or manage a household. At times, some of them could be quite gentle with their children. People in this group were often well educated

and functioned as competent scientists, teachers, or professors.

Neglectful parents usually present quite a different picture. They tend to be disorganized, impulsive, and inconsistent. Their development is arrested at the childhood level and they are unable to accept even minor responsibilities. Going downtown to pay a bill or to the dentist for a toothache presents insuperable problems. They are completely passive and often depend on their children for their own needs, such as preparing meals, cleaning house and taking care of the younger children.

When they are confronted with disapproval of their behavior, the reactions of neglectful and abusive parents are likely to be different. Denial is common in both types of situations, but the neglectful parent is more likely to be remorseful. Faced with the evidence of her own disorderly household, a neglectful mother will feel sorry for herself, cite the innumerable obstacles which face her, and make false promises to reform.

On the other hand, abusive parents characteristically express extreme self-justification about their actions. Many attacking parents feel righteous and principled in expecting good behavior even of infants and believe that the only way to form their children's character is to beat them. This is contrary to many popular notions that the child beater is unprincipled and irresponsible.

#### Mr. Nolan

Dr. Leontine Young, a social work educator, describes an abusive father.

A tall, well-dressed man sits in the office of a social agency talking to a case worker. She has called him because a neighbor has reluctantly complained that he beats his children with excessive brutality. Mr. Nolan speaks with quiet emphasis. His language and diction indicate an educated man.

He is explaining that he loves his children. His wife indulges them too much, but this is really

18 Young, op. cit., p 75

 <sup>&</sup>lt;sup>19</sup> Ibid, p. 71.
 <sup>20</sup> Kaufman, Irving, "Psychiatric Implications of Physical Abuse of Children", in *Protecting The Battered Child*, Children's Division, The American Humane Association (Denver, 1962).

the only problem. Of course, the children have to obey his commands, and when they don't he punishes them. One evening he told his four year old son to go into the basement and stay there.

The little boy went down the stairs and ran quickly back. It was very dark and he was frightened. "I spanked him and told him to go back," explains the smiling father. "He went down the stairs and again ran back to the light, frightened, so I spanked him again and sent him back. He returned four times, and each time I spanked him harder. The last time he stayed down."

"And what did the little boy do that you punished him so severely?" asked the caseworker.

A look of blank surprise comes over Mr. Nolan's face. He stares at the caseworker, and when he speaks his voice is for the first time uncertain. "I don't remember. I can't think what he did." A wariness appears in his eyes, and he remarks that his time is short and he must leave shortly.<sup>21</sup>

Another outwardly conscientious parent is described by Dr. Young. This woman kept an immaculately clean house and sent all the children to school with impeccable promptness and regularity. They were always clean and well-dressed. They never came home to an empty house; their mother was always there waiting for them. Yet this mother wakened the children each morning at five to scrub the bathroom and kitchen floors, run futile errands, and finally gulp a meager breakfast before school. The only daughter was singled out for the special torture of having red pepper rubbed into her genitals, then being beaten when she screamed.

When the children in this family returned from school, they were not permitted to go outside and they were never permitted to play. They could look at their many toys, but not touch them. Any infractions of family rules were severely dealt with.

#### Isolated Parents

Abusive parents tend to be possessive of their children and to oppose friendships and personal attachments outside the family. They are secretive and rejecting of outside help. Where there are two parents, often one parent is abusive and the other is helpless, passive and almost a prisoner. Both the beating and the non-beating parent keep up a strong facade of unanimity and mutual devotion, even though deep marital discord is usually revealed as time goes by.

Both neglectful and abusive families are isolated from others in the community. Abusive parents usually forbid associations by their children, while neglected children are shunned by their peers because of uncleanliness and odd behavior. Neglecting parents themselves make little effort to socialize. In keeping with their



"Food supply" discovered with neglected children

isolated orientation, a very small proportion of either neglecting or abusive families has any religious affiliation or habit of church attendance. Sometimes strictly religious people can be found among abusive parents, but they tend to be fanatical and extreme in their interpretations of religious doctrines. There was the fairly recent example of a Sacramento mother who refused medical attention for her daughter after the latter swallowed her own hair, which she had cut contrary to parental prohibitions. When the daughter died, the mother showed no remorse, since she interpreted the death as the natural result of disobedience and of violation of a religious tabu against hair cutting.

<sup>&</sup>quot;Young, op. cit., p. 42.
"Ibid., p. 171.

### The Influence of Social and Economic Factors

There are factors other than the personal characteristics of parents which predispose toward the mistreatment of children.

One question that inevitably arises is the effect of social and economic status on the incidence of child neglect and abuse. Are most of the cases found among low income families and, if so, is the inability to meet children's emotional and physical needs a general characteristic of low income parents? Many thoughtful people have assumed that the problem is confined to low income families, who are viewed as unstable, disorganized, and lacking in goals or planning ability.

One researcher in the field makes a distinction between "problem" and "stable" low income families.<sup>28</sup> The latter, which comprise the majority of low income families, take good care of their children and expect others to do the same. Cruel or indifferent families are deviants from the general social norms which prevail among poor persons. Child rearing patterns may be different among classes, but accepted behavior at any social level does not include harming one's children.

Another study, this time of ADC Families in Chicago, resulted in similar findings. The profile of family disorganization was not typical of the lowest economic group, the welfare recipients. The report observed, "The Public has gained a false image of a mother who

Willie, Charles, The Structure and Composition of "Problem" and "Stable" Families in a Low Income Population (Syracuse: Youth Development Center, 1961).



This is a slum "playground" area

is shiftless and lazy, unwilling to work, promiscuous and neglectful of her children . . . This study found very few mothers, not more than 3%, who fit this image in one or more ways." 24

Yet, the experts agree that while the majority of low income persons are good parents, the proportion of abused and neglected children is greater among this group. Low income persons are more accustomed to seeing maltreated children. They are less likely than middle income individuals to report such cases to authorities, with whom they often do not identify. The low income group exerts less pressure, either formal or informal, against neglectful parents and they tend to be more tolerant of corporal punishment than is the middle class.

The lower income group may do little to discourage child neglect and abuse among its ranks. At the same time, a lower class family whose behavior is deviant in the area of child care is often very visible to the outside community. A family's request for financial assistance, for example, exposes it to an initial investigation and continuing contact that under other circumstances would be summarily rejected as an invasion of privacy. Children from prosperous homes may be shielded from official view or sent away to school if the parents cannot handle them. In general, lower income families, with low prestige and frequent ignorance of official methods, have less means of concealing deviant behavior, and less motivation for doing so than the middle class parent who fears the censure of his peers and loss of status. The lower income parent has less to lose by the discovery of his behavior, and takes less pains to hide it.

Finally, there is no doubt that low income parents may have to face more obstacles to family living than those with higher incomes. Lack of work skills may force parents to move from place to place in search of a job, regardless of what this does to a child's associations and schooling. Lack of money makes it difficult to find adequate housing, provide nourishing meals, or pay for babysitters when the parents want a night out, regardless of how well-meaning they may be.

We have said that the majority of low income families are stable. But the disorganized and broken families from any class are likely to end up at the low income level. Disorganized families, some of whom are used to a higher standard of living and all of whom have difficulty in ordering their lives, are ill-equipped to cope with the burdens of managing on a minimal budget. Low income only increases their inadequacy as parents. It is also possible that low income per se can produce, as well as aggravate, inadequacy.

#### Effect of Low Income

It has been true throughout history that subsistence level living has often tended to brutalize the relationship between parents and children. Where economic resources have been meager in other times and places. not only are children inadequately dressed, housed, and fed, but they are left without parental attention. made to work at an early age, sold, enslaved, or even kılled.

Low public assistance grants have been indicted on the grounds that they reinforce parental inadequacies and make the job of being a parent very difficult. "In our public assistance programs, we have assured ourselves and others that parents could be good parents and children grow to manhood and womanhood on allowances below a subsistence level. In these and in other respects, we may have acted as false prophets indeed. For such low levels of living over a sustained period not only are physically debilitating, but they demoralize the will through destruction of hope." 25

At the same time, although we are aware of over 10,000 cases of endangered children among welfare recipient families, it would be a mistake to believe that the problem is confined to or is characteristic of the lower economic level. Testimony before the Committee described a case of child starvation where the father was earning \$7,000 a year.

Parents may even be college graduates and professional persons. Emotional neglect occurs among some high income families where parents spend little time with their children, entrusting their care to servants, private schools, and camps, then attempting to compensate for this lack of attention and affection by giving the children expensive toys and gifts. Not long ago, a well-to-do Sacramento mother absorbed herself in social activities and a new husband, ignoring her two daughters' bids for attention. When the older girl ran away from home and became pregnant, the mother refused to have her back. She is now a delinquent ward of the Court, lives in a foster home without her baby whom she relinquished for adoption, and is very bitter toward her mother who sends her gifts, but rarely visits. The younger sister, who is still at home, is suffering from lack of parental concern and is also becoming a behavior problem.

Welfare Council of Metropolitan Chicago, Facts, Fallacies and Future—Summary of a Study of the ADC Program in Cook County (Chicago, 1962).

Lathrope, Donald, "Toward the Elimination of Poverty," Public Welfare (July, 1966) p. 220.

### Other contributing Factors

California is one of the fastest growing states in the Union. The rate of increase among children is even greater than the growth of the State as a whole. The number of children under 18 in California increased 75% between 1950 and 1960, as compared with 25% nationally. This has been due primarily to the heavy inmigration of young adults. Young families in these circumstances tend to lack establishment in the community. They are usually separated from family and friends in times of crisis.

These same circumstances lead to increased family break up, which, in turn, fosters neglect. In 1960, ¾ of a million children were members of one-parent families, usually in fatherless homes. Many divorced mothers are working to support their families, which makes adequate supervision and care of the children without a father's guidance especially difficult.

Although the majority of military families are stable, military dependents manifest some unusual problems, and California has several large military bases. In military families, young wives with small children, living on low allotments, may have their husbands gone for extended periods and may have to move frequently from place to place. This type of living makes mistreatment of children both more likely and more difficult to detect.

In Sacramento not long ago, the young wife of an enlisted man brought her infant son to the hospital with multiple bruises and fractures. The examining doctor found evidence of healing breaks and immediately suspected abuse. The mother finally admitted to police that she had thrown the child across the room after frustrations with his crying during one of her husband's extended military absences from the home. Examination of a two year old son also revealed old fractures and brain damage due to head injuries. The mother revealed she had harmed this older child when the family was stationed in another state. Medical records from that state showed that he had been taken for treatment and that abuse was suspected, but the family was transferred and the suspicions were not acted upon. The husband in this case denied knowledge of his wife's mistreatment of the children.

Other groups which, like military families, move from place to place are also vulnerable to child abuse and neglect. Among migrant farm families who must move several times a year, child neglect is relatively common. In this case, the problem is compounded by low earnings and poor living conditions. Children are left alone while their parents work, their school attendance is irregular, and their health and nutritional needs are often all but ignored.

Among minority ethnic groups, a greater proportion of neglected children may be found on the basis of low income alone. In particular, American Indians who have moved away from the reservation often find difficulty in meeting parental responsibilities. Removed from the firm authority and traditions of the tribe, they do not know what parental behavior is expected in the outside community.

But it would be a mistake to believe that child neglect and abuse are primarily minority problems or confined to any particular group. Expert witnesses before the Committee stressed that the cases with which they were familiar cut across all ethnic, racial, religious, and economic lines. One witness, Mrs. Wanda Schermerhorn of the Los Angeles County Schools, made this comment when asked whether most neglected children came primarily from minority communities: "I would say that it certainly is a problem in minority areas for many reasons. But I would certainly say that neglect of children in the sense we are discussing occurs as much in Caucasian families as it does in minority families. I have encountered indescribable neglect in Caucasian families. And I would say that my experience with minority families basically has been one of affection for children, of concern for children, perhaps accompanied by ignorance of how to care for them. But the kind of complete oblivion to the needs of children, I would find much more likely in the Caucasian family than in the minority group. And this again is probably not a fair generalization."

The continued growth of urban centers is perhaps one of the most important factors fostering child neglect and abuse. Once in a small town, a two year old child was tied outside on a broiling August day. Within an hour, several people had reported his plight to the sheriff. In an urban area, passersby might be disturbed by the suffering of a little child in the hot sun, but they would not know the family and would probably not know whom to call. Community concern for neglected children is less likely to be expressed on the neighborhood level in our growing urban areas. This in itself makes mistreatment a more likely occurrence.

Mational Study Service, op cit, p. 14

Given the extent and magnitude of the cruelty and disregard parents can show toward their children, what is being done to help these children, what more can be done, and who should do it?

First of all, it must be recognized that abusive and neglectful parents are not going to change by themselves. "Unless pathological families receive continuing and consistent, personalized help they have neither the volition nor the means to conform to society's norms. People do not spontaneously decide one fine Monday morning that they are going to change their way of living, proceed to do so at the price of enormous effort, and then maintain the change, especially when they have neither the strength nor incentive and no conviction that it would benefit them anyway. For people as passive as those in our study the idea that an occasional lecture or threat will accomplish such change is patently absurd." <sup>27</sup>

Secondly, the harm they do to their children is, by and large, something the children cannot survive without physical and emotional scars. The child who has been consistently harmed by his parents is not going to outgrow his problems as an adult. The less that is done for him, the less will be his resiliency and ability to cope with life's problems as time goes on. His personality and emotional handicaps will be compounded with time,<sup>28</sup> until, as an adult, he is unable to be a good parent. And so, the cycle continues.

Not only do neglected and abused children become poor parents, but they may develop into delinquents, criminals, psychotics, and adult social problem cases. The effect spreads beyond themselves and their children. The reasons for this are obvious. "Children who are abused present a problem to the community, aside from society's moral and legal obligation to help them. They develop patterns of living without parental supervision and discipline, and often hate and resent all persons in authority. They have untreated illnesses and suffer from a lack of needed medical care. They may develop destructive behavior patterns in an unconscious effort to secure acceptance and gratification of their needs. They often fail in school and are unable to adjust to persons outside the home." <sup>29</sup>

<sup>&</sup>lt;sup>27</sup> Young, op cit., pp. 145-6.

Stennett, op. cit, p 449
 Tennessee Department of Public Welfare, "A Project in Protective Services," Tennessee Public Welfare Record (August, 1966) p. 79

# Part II: Public Action Through Protective Services



A beaten youngster is comforted

### Rights of Parents and Children Under the Law

If the cycle of parental inadequacy and cruelty is to be broken, and its broader social effects prevented, intervention is necessary. The founders of the Children's Division of the American Humane Association recognized this even in the last century, as was indicated earlier in this report. The original child protective services, however, were rescue operations, with punishment of the parent and removal of the child from the home as the goals. Mere punishment of the parent is now recognized as a blind alley. If the goal of helping the child is to take precedence, initial efforts must be made to maintain the child with the family. Where this cannot be done and where a child's life and well-being are endangered, then placement outside the home should be sought.

The legal right of a child for protection is based on the concept of the State as parens patriae, which means the State's concern as the guardian of social interests and the concept that the State has both the right and the duty to see that the physical, mental, and moral welfare of its children is safeguarded. In this country, the rights of the control and custody of children are ordinarily fixed in the home and the natural parents. In the absence of abnormal circumstances, the State has only a limited concern with a child's upbringing. However, it is also clear that the State has the authority to protect the child whose parents fail to do so. The concept of the State's authority as superior to that of neglectful parents has developed in the last century and represents the community's concern for its children.

The rights and responsibilities of parents are specifically set forth in the Welfare and Institutions, Civil, Probate, and Penal Codes. These rights and duties can only be overruled by a Court. Parents have the right to bring up their children and the duty to do so properly. The right of a parent extends to the placement of his child in a home for temporary or permanent care, but such a placement does not alter his responsibility for the child's well-being, support, and education. The parent may also place his child for adoption or relinquish him to an adoption agency.

"The authority of a parent over a child is not limited, so long as it is exercised so as not to endanger the child's safety or morals, or to interfere unjustly with the child's welfare. Either parent has the right to inflict reasonable and moderate punishment on the child

for the punishment of faults of disobedience and the enforcement of parental authority." 30

The rights of a child have been summarized as follows:

- "1. The child is a person in his own right. A considerable body of statutory law spells out his rights to care, teaching, training, and treatment. These add up to birthrights to live, grow, and develop to the fullest potentialities of his individual capacity.
- "2. However, the law presumes that the child is too immature and inexperienced to be left to fend and defend for himself, to make his own choices and decisions, and to realize his rights wisely and responsibly.
- "3. Consequently, the law requires that the exercise of the child's rights shall be entrusted to other persons capable of, and interested in, acting for the child during his childhood.
- "4. The law makes it a duty of parents to take up this responsibility for their own children.
- "5. It makes it a duty of the State to supplement and substitute for parental efforts whenever needed to further the best interests and welfare of the child." <sup>31</sup>

With the growth of laws to protect the rights of children, juvenile and adult Courts have an established and essential role in the protective field. But the Court's role is limited and it cannot deal with many of the situations which threaten children.

Adults who attack children are likely to repeat the incident, but this cannot be proven in an individual case. Because it takes place in the privacy of the home, abuse and neglect especially of preschool children is rarely witnessed; in addition, infants and toddlers, who bear the greatest brunt of mistreatment, cannot speak out on their own behalf. Usually a child under seven is not considered a competent witness; furthermore, his story may be confused out of fear of parental retaliation or out of a sense of family loyalty. As a

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Ward, M. R., California Juvenile Laws, (Los Angeles: Legal Bookstore, 1966) p. 18 (From 46 C.J. 1221).
 Weissman, Irving, "Legal Guardianship of Children," The Social Welfare Forum (National Conference of Social Work, 1950) p. 74

result, it is very difficult to demonstrate clear and present danger unless a child has already been severely harmed. Even then, the Court has no real method of resolving the situation except incarceration of the parent or removal of the child from the home.

Criminal charges against a parent are usually very difficult to prove and punishing the parent does not change his behavior nor necessarily deter him from further acts of abuse. Since guilt must be proved beyond a reasonable doubt, lack of evidence may make it impossible to obtain a conviction. Witnesses are protected against self-incrimination and a parent cannot be forced to testify against his own interests. When such prosecution fails, the parent may feel even more punitive toward his child, more immune from outside interference, and more justified in his actions. In addition, the publicity which surrounds a trial often makes it more difficult to work with the parent afterwards. Even where legal action against the parent might be possible, the child's interests are usually better served by not pressing charges.82

Juvenile Court actions on behalf of a child are not criminal prosecutions against any person, so proof of guilt beyond a reasonable doubt is not required. But, even here, Court decisions must be based on a preponderance of evidence and any case referred to the Juvenile Court must be fully documented. Witnesses before this Committee cited instances of how the police and court system fell short in protecting the rights and well-being of children. In some cases, a home situation gave every sign that it would develop into danger for the child, but it had not done so as vet. In other situations, mistreatment of the child had apparently already occurred, but it could not be proven or, if it was proven, the parent was put on probation or given a light sentence and the family resumed life as before without further assistance. There were also cases described where court intervention came too late, after the parent had seriously injured the youngster. Finally, there were instances of harm to children that were sufficient for concern, but not for formal legal action, so nothing could be done.

Mrs. Ruth Rushen of the Los Angeles County Probation Department testified that the actions which the police, the Juvenile Court and her own department can take are limited. She summarized the need for a new agency outside the present system as follows:

"We feel that society must accept that fact that some parents are inadequate in some ways and will remain inadequate. These situations call for long-term, realistic planning which would not include taking these children in and out of their homes, in and out of court, and in and out of foster homes, but rather providing a kind of service, for example, parental aid, and leaving the children at home. An agency small enough, and with its entire focus on the protection of children, could provide this sort of service.

"The police will only pick a child up when the situation is provable, you see, so they have to go on provables. So a lot of times when they get out and they can't prove anything, they do what they call 'counsel and release,' they simply counsel and tell the parents to not do it anymore. 'If you did do it, don't do it anymore,' and they keep an eye on the situation. We seldom, only in extreme situations, get the first contact with the police. Usually when we get it, the police have been out several times.

"In other words, this is what we are saying, it has to be within the framework of the law. And anything physically and psychologically could be happening to the child while the slow wheels of the law grind out. This is not really protecting the youngster."

<sup>58</sup> In a recent case before the Brooklyn Family Court, Judge Harold Felix took unprecedented action in the case of an infant suffering from broken legs and ribs. Charged with abuse, the parents sought dismissal for lack of evidence against them. Judge Felix invoked the negligence law principle of res ipsa loquitor (the thing speaks for itself). When he received no satisfactory explanation, he removed the child from its parents, setting a course that courts in other states may find persuasive.

Swollen feet of neglected 3-year-old girl



An example of where the wheels of justice ground too slowly was described to the Committee by Los Angeles Police Sergeant Shirley Maxwell.

The first part concerns this two year old boy, who was brought to our attention after a neighbor anonymously contacted the police department and stated that they believed that this two year old boy was being severely mistreated. We had no other information except the address and the fact that people lived in the back and that there were four or five children. We went to the home and after viewing the house, we found it to be in immaculate condition. The young mother-she was only 22 or 23—was also in a very clean, very kempt condition, and the four children she brought out to show us, all under five, were nicely dressed and well-cared for. But when we insisted on seeing the two year old that we had come to view, she brought him out from a back room and he was covered with various marks, scars, scratches and he had an infected burn on his buttocks and on the back of his neck that had not been treated. We asked her how it happened, and she told us a story about how he fell against the hot stove, and because of the care of the other childen, she wasn't able to take the child to the hospital.

We realized, even in our lay opinion, that the child was in need of immediate medical attention, so we took the baby over the Children's Hospital.

Anyway, we hospitalized the child at Children's Hospital and took him into protective custody so that the mother could not come and get the child out of the hospital and take it away until he had had some type of care. We checked around on our own, because we felt that this baby had been mistreated for over a period of time, and being one of the investigating officers on the case, I contacted the County Hospital and found that the child had been admitted on two previous occasions in two previous years, once with a second

degree burns on both his hands, and another time with a cut to his private parts and various marks and bruises. He was only two years old at this time. Neither of these occasions were reported to the police department. This was our first contact with this little boy.

We decided that from the placing of the burns which were quite large in size, about three by three—I have pictures to document this—and the fact that he had so many other numerous bruises, his little finger was smashed, and one of his ears was black and blue, and he was just a little mess—we did go back to the home the following day, and we talked with the mother, and she had all these children running around, so we invited her to come to the police station with us, which she did, and after we were there for a while and put the children in another room so we could con-



verse with her, she acknowledged to us that this child was a behavior problem to her, that she had associated him with his father. Now, all the other children were from the same father, except the tiny baby, which she had by a man she wasn't married to, a common law husband, who was in prison for a sex offense on a teenage girl. But anyway, she acknowledged to us that little Tony was a behavior problem. He reminded her of the father who had been very sadistic to her and that Tony was just like his dad, he looked like his dad, he was always getting revenge on the mother. She had actually taken a hot skillet when she was fixing breakfast for the other four children, and she told him to do something and he wouldn't do it, so she lost her temper, took the hot skillet, hit him on the back of the neck with the hot skillet, and also on the buttocks. This was quite a long investigation, but she summed it up with, "God must be looking after me, because if you hadn't come to take Tony, I probably would have killed



We did arrest her, we took the other children into protective custody, we had a preliminary hearing.

She was arrested under Section 273A that was mentioned, endangering the life and limb of a child by all these marks and scars, with treatment not administered, etc. She was found guilty and placed on probation, which would have been up in 1966—three years' probation. We had a Juvenile Court hearing, at which time our department went on record saying that it did not believe the child should ever be released to the mother because of the personal feelings that she could not control that she had toward that child.

Then we lost track of the case, and about a year after that, the Hollywood officers received a call from the County Hospital that the child had been readmitted to the County Hospital for marks and bruises, black eyes, and they felt that the child had been mistreated. By the time that the officers got to the County Hospital, the present boyfriend, by whom she had her last child, had, without permission, gone to the hospital and removed the child. The officers could not find the child for about two weeks, by this time most of the bruises had disappeared. They went to the D.A.'s office, and they could not get enough information for a criminal filing to take the child out of the home again because the first matter had already been handled.

In March of this year, a doctor was called, the baby was taken over to the doctor's office, he was dead on arrival. She stated she had placed him in a bathtub, and while her back was turned—now he was four years old—he had drowned in the bathtub. But closer examination revealed that he had been struck a severe blow to the stomach area and had died because of a rupture and peri-

tonitis, and he had over a hundred marks, scars and bruises on his body. She had gotten disgusted with him because he had gone to the bathroom. The relationship with him, as you can see, was not good. She had sewn up his penis with black thread because he urinated and got her angry. He had a boil on his buttocks, and she had sewn that up. It ended up that she had to go to jail. The child is no longer with us, and the four other children had been placed in foster homes by the probation department. We wanted to go into detail as to how one of these cases can go on and on, and of course, Tony won't be suffering any more.

We have had many excellent social agencies who do wonderful counseling, but the people have to go to them, they have to be motivated to call them and make an appointment, and the service is on a voluntary basis. Now, the protective services work so that the social worker will go to the home right then and there, and work these things out on an emergency basis.

As a private person, and if I were a neighbor, or even a police officer, I would heartily endorse them because we need something between the official legalistic action of the police department, who many times know it is a terrible situation, but can't do anything about it because we can't prove it. Maybe we don't even want to do something because we feel that this family is worth working with, you know, in keeping the unit together. The other social agencies, who because of their own problems, have to work on the basis of a family coming to them, sometimes there are long waiting lists, they are so busy. With this person coming right in the home and helping them out, they can get on their feet.



Another Committee witness, Los Angeles Police Chief William Richey, felt that the case of little Tony was not atypical. Complaints against parents are often dismissed, especially in neglect cases. "Last year, we had about 512 cases on 273A, child neglect, and in less than half of those cases were we able to get complaints, and probably half of those, we were unable to prosecute successfully."

The need for evidence, for the fait accompli, under the court system caused the Committee's witnesses to agree that an alternative is needed. Dr. Belle Poole of the State Department of Public Health stressed that the mortality rate of the battered child syndrome is about 50%. Although the danger is not this great with each incident of parental assault, the risk is accurate over a period of time. Something must be done to help the children before parental abuse reaches crippling or fatal proportions.

Mrs. Helen Boardman of Los Angeles Children's Hospital stated the case for early referral and detection for preventive purposes in this way: "Assaulting children sufficiently to cause injuries is a crime in the State of California and I believe that logically this kind of report should be made to law enforcement. Now, we have a number of children whom we see, who have the first injury, which is not a severe one. This might have happened, although it is unlikely, in

the way that the parents have described, and the evidence is not there to indicate that a crime has been committed. It is this kind of child who has the first, the minor injury—the three-month old, the six-weeks old, that has a broken arm, a broken leg, and the parents say it was the result of an accident. It is for this kind of child, on the first injury, that we need protective services."

Protective services can also help in cases where the children are damaged through emotional neglect, but where the matter will never come to the attention of the police or a court. The schools often see this type of child. Dr. Dorothy Lyons of the Los Angeles schools describes one such boy: "This little boy who was extremely disturbed—I think he had a psychiatric diagnosis of schizophrenia, an eight or nine year old boy-the family would not accept the fact that they had a sick boy. The father threatened the school because the school said we cannot keep him in school, this boy is unable to function in the classroom; he just sits and stares out the window. The mother was a person who worked, she had no responsibility for this child, he was just a burden to them. The school bugged them because he was doing nothing in school. . . . This is the kind of case that would be wonderful to refer to protective services and say, 'Can you help this family understand their boy's needs?' We were begging the family to help their boy."



Kitchen in a typical neglect case

### Protective Services Administered by Public Welfare

All the evidence points to a need for protective services for children outside the Court System. One authority, Monrad Paulsen, makes the argument that there should be a network of protection in each community.33 The literature in the field, surveys of public and private agencies, and the testimony of the Committee's witnesses give weight to the concept of a public protective services agency, as part of the welfare system, but administered separately.

Says another spokesman: "Having worked 17 years with a private child protective agency, I am most cognizant of the place of the private agency in the child protective movement and the role it can still play. On the other hand, we must recognize that the provision of adequate child-protective services is such a vast task confronting our society that it cannot be done solely as a private or voluntary agency effort. It is a task that requires the agency organization, services, and funds available only in the public welfare setting. It is a task that quite properly should be supported by tax funds".34

One of the Committee's private agency witnesses, Mr. Manual Finbrez of the Catholic Welfare Bureau, concurred. Mr. Finbrez defined protective services as "an obligation of the public welfare, and not of a private agency."

Most of the witnesses agreed that protective services should carry no law enforcement authority and that parents should be approached with an offer of help, not threats. It was felt that the public already has a legal agent in the Courts, and that law enforcement agencies have proven inadequate to solve the problem in too many cases. It was considered best to completely separate protective services from the functions of the Juvenile Court and the probation department. As Mrs. Helen Boardman of Children's Hospital told the Committee, referring to protective service workers, "I don't know that they should have police authority. I think that this would be wrong, because I think we already have agencies with police authority."

#### Nonpunitive Authority

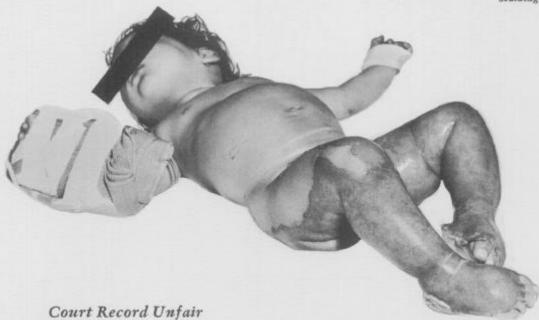
A protective services agency organized along voluntary, nonpunitive lines would have sufficient latitude to meet problems as they really are, not as they are defined by limited legal criteria. In addition, the witnesses before the Committee seemed to agree that the public would be more willing to report suspected child abuse to a protective services agency than to a police department. Many people have an understandable reluctance when it comes to intervening into the personal lives and family affairs of others. Captain Richey of Los Angeles made this rueful comment before the Committee: "Nobody wants to be the bad guy . . . Too often, people are interested in protecting the father or the mother who abuses the child . . . If a man drinks himself into a drunken state in a bar and becomes involved in a fight, and somebody knifes him, there is no reluctance on the part of anyone to prosecute the man who did it. But here we have a child too young to talk, he has no advocate, and some people are not willing to protect him. They say let's give the parents a chance." Where prosecution of the parents is not involved, as in a protective services agency, the public should be more willing to report situations suspected of being dangerous to children.

Having a service outside the purview of legal sanctions is also important in working with the parents of a mistreated child. According to Dr. Dorothy Lyons, Physician Supervisor of the Los Angeles Schools, what is needed is. "Not the punitive service, that service is going to make them feel that someone is directing their life, but a service that is going to work with them and make available other resources in the community. We don't have this. We see cases frequently that are crying out for help for a family, and there is no appropriate place to get this service."

Other witnesses felt that the lack of punitive authority toward the parent was a source of protection for the child, who might otherwise be further harmed for having placed the parent in jeopardy. Mrs. Wanda Schermerhorn stressed this point: "The moment that there are protective services available in a nonpunitive, voluntary setting, and where a school principal or school teacher or neighbor can call and ask for the kind of voluntary intervention that we have been describing as protective services, there is not the fear of retaliation. And I think this cannot be underscored too heavily."

<sup>23</sup> Paulsen, Monrad, "Legal Protections Against Child Abuse," Children (March-April, 1966).

Nyden, op. cit, pp 239-40



Some of the Committee's witnesses also saw referral to a separate protective services unit as a way to avoid giving children a court record. Mrs. Ruth Rushen of the Los Angeles Probation Department elaborated on this problem. She felt that protective services should be provided wherever possible "without the stigma of a court record. The probation department wants to go on record today as feeling very strongly about this point: that many of these children are given court records simply because there is no other way to afford protection, and since we work within the framework of the Court, we have to abide by strict limits.

"For example, we picked up a family of eight children about two weeks ago. Three of these children had a temperature of 103, they were not ill enough to go to the Los Angeles County General Hospital, but they were not well enough to go into the shelter care. Because we were working within the 48 hour limit to detain a child, we had to file a petition. This was very unfair. These children did not need the protection of the Juvenile Court, they needed, rather, a temporary place of abode pending a crisis situation."

The Committee agrees that a protective services unit could probably handle a situation such as the one described more appropriately than could the Juvenile Court. But even in those cases where Court action is necessary, the Committee was in agreement that children's records should be sealed, particularly in the case of dependent children.

Most authorities believe that the welfare department is the logical place for child protective services. The

Children's Bureau of the Department of Health, Education and Welfare recommends that the welfare department be the receiving agency for complaints of child neglect and abuse. The welfare department is an established agency, well known in the community. It is clearly separate from the court-connected authority of police and probation, which should make the public less hesitant to give referrals; at the same time, its staff is accustomed to cooperating with those agencies in cases involving children. Finally, the inclusion of protective services for children within the scope of welfare department functions is in accord with the new emphasis that the welfare department is not just an agency to disburse funds, but an agency responsible for rehabilitation and social service.

Dr. Dorothy Lyons of the Los Angeles City Schools summarized it in this statement: "Because of the magnitude and nature of the problems with which they must cope, we are agreed that protective services must be extended and developed primarily under the auspices of public agencies. It is clear, also, in the light of all relevant considerations, that the preferred location for these new and extended services should be in separate, clearly defined units within county welfare departments."

Six county welfare departments have already operated protective services projects on a demonstration basis with considerable success. Some of these will be discussed later. See the Appendix for Sacramento County's Protective Services Plan, as an example of what is being done.

### **Financing**

In order for welfare departments to assume the task of child protection, funds are needed for new staff with specialized training and experience. The regular workers in the ongoing county caseloads are not generally qualified to deal with the special problems in the protective area and, even if they were, they could not devote the time in addition to their regular duties. Protective services should be a separate function, with highly trained staff who work on an intensive basis. They will have to face the problems of working with upper and middle income families and with families who often will be resistive to their efforts <sup>35</sup>

Staff costs money and funds will be needed to establish protective services on a statewide basis, either in county welfare departments or in district or regional offices. Dr. Lyons told the Committee, and the other witnesses and interested parties concurred, that "Funds for these new and extended services must be sought predominately, if not wholly, from Federal and State sources." One Federal source is the 75% Federal reimbursement provided under the 1962 Amendments to the Social Security Act, to administer service programs for public assistance recipients and for other low income persons who otherwise might become recipients. In addition to this, the State receives each year a grant of Federal funds to be used to stimulate statewide child welfare services. Some of these funds, which amount to something less than \$3 million in the current year, could be used to help develop this service. Finally, Aid to Families with Dependent Children (AFDC) funds now cover the cost of foster home care for the children in foster care who are eligible for public assistance. Public assistance funds would continue to be a foster care resource for eligible children.

#### More Federal Aid

It should also be mentioned in regard to financing that increases are anticipated in the amount of Federal money available for services to children, and there is a strong move throughout the country aimed at bringing about Federal reimbursement for the cost of care and service for children not linked to AFDC. The need to include families at all income levels was stressed in testimony given by Mr. Leonard Panish, Deputy Director of the Los Angeles Bureau of Public Assistance. Since "neglected and abused children come from all economic levels . . . that service must be

available to any child whose present or future is endangered by parental neglect. This requires that such a program must not be limited to families who meet certain residence, income or property requirements, because all children should be guaranteed protection . . . protective services should have priority to those families not known to any social agency."

Federal legislation now pending (H.R. 16760, H.R. 14771, S. 3723 and others) would authorize openended federal matching grants for child welfare services, with 75% for salaries and training and a variable amount for such programs as day care and foster care. If Federal funds should be made available for protective services for all income levels—and it is strongly recommended that California support such a movethis added money in all probability would be channeled through state welfare departments, since the administration of child welfare services by public welfare departments is the pattern throughout the country. Apart from the other considerations, Federal financing is a principal factor in recommending that child protective services be established in public welfare departments.

#### State Contribution

In addition to Federal financing, state expenditures will be required. Where 75% Federal matching is available, the state will have to put up the additional 25%. In the case of services to families on higher income levels, child welfare funds can be used, but these funds are limited and some state supplementation will be necessary. Although most of the supplementary financing will have to be provided by the state, counties also have a financial investment in protective services Future probation costs, which are wholly county financed, stand to be reduced through an effective protective services program. In addition, many counties are already investing some county funds into child

A recent study substantiates the need for protective services as a separate function of the local welfare department. Regular AFDC workers, even those with graduate training, were less effective in dealing with protective services problems in their caseloads and more legalistic in their approach to these problems than were workers in a separate unit whose only task was to provide protective services for children Streshinsky, N, et al "A Study of Social Work Practice in Protective Services It's Not What You Know, It's Where You Work," Child Welfare (October, 1966) pp. 444-450, 471.

welfare and protective services and this contribution should be continued.

Estimates of the total cost of a statewide protective services program vary according to the estimates of the numbers of children needing this service. As we have discussed earlier, not only have there been no statewide surveys of the numbers of children involved, but there are no fixed definitions of abuse and neglect. Although any new program faces the difficulty of predicting costs, this should not be an argument against program initiation.

#### Cost

The special demonstration projects operated by county welfare departments do give some ideas of cost. Los Angeles County has two protective services units, one financed by a Federal grant and the other by Los Angeles County itself. The total cost of the two units, which include the services of six social workers and six emergency foster homes, as well as some homemaker service, is about \$60,000 to \$70,000 per year. One hundred and fifty families, or an average of 300 children, are served by these two units. With 75 workers and 15 supervisors, Mr. Panish, Deputy Director of the Los Angeles County Bureau of Public Assistance, estimated that 1875 families, or twice that many children, could be served at any one time. This would give limited, but fairly widespread coverage to the county. The cost of this service would be about \$1 million in Los Angeles County.

If the pending Federal legislation is successful in 1967, it should be possible to match California's current child welfare investment of \$35 million with federal revenues sufficient to finance a comprehensive protective services program at no additional state cost.



A city slum area

### The Operation of a Protective Services Unit

The concept of a protective services agency for children includes an organized method for receiving referrals and dispensing services to neglected and abused children. In carrying out its function, a social agency receives referrals from police, schools, courts, neighbors, physicians, and other agencies. Then the agency sends a social worker to the family's home. He comfronts the parents with the community's concern and tries to find out about the quality of child care they do (or could) provide. When this care is inadequate, the worker offers to help them improve their parental abilities through counseling and concrete assistance aimed at benefiting their children and avoiding Juvenile Court action and possible loss of custody. The social worker may continue to see the family for a short or extended period of time, depending on the situation. He is not empowered to remove the children from the home, but if he thinks the children are in danger, his agency may petition the Probation Department and the Court for their removal. Sometimes he may be able to persuade the parents to place the children voluntarily, perhaps on a temporary basis until solutions are found to family problems.

#### Informed Public

A protective services agency does not necessarily wait for crises to occur, it attempts as much as possible to prevent gross harm to children before it happens. To achieve this goal, a protective services unit will not only wait for complaints and referrals, but will make an effort to inform the public, the schools and other agencies of the signs of child neglect and abuse. Either on its own, or through community surveys, it may try to discover families who may need its services. Sometimes workers making an informational survey about employment in a community or some other subject will find families anxious for help with family problems. In certain areas, the indigenous case aide may be a helpful ally to the social worker.

Protective services has no magical rules. It is a series of activities designed to help inadequate parents and their children, activities which must be modified according to the requirements of each situation.

<sup>56</sup> Key, William H., "Controlled Intervention—The Helping Professions and Directed Social Change," American Journal of Orthopsychiatry (April, 1966) p. 403.

### **Special Skills and Techniques**

Probably the most essential factor in the success of a protective services program is the quality of the social work staff. They should be provided with specialized in-service training. Protective services workers must be well-trained academically, knowledgeable, intelligent and imaginative, and they must also possess the ability to relate to uncooperative and disturbed people. A good protective services worker demonstrates the qualities of warmth, tact, sensitivity, flexibility and ingenuity. Here is one client's description of her social worker:

One thing I definitely like about my worker is that she's always pleasant and cheerful. She's the only person or human being I see all week except my howling, snarling kids and they're always fighting... but the minute she comes... she makes you feel glad that she's actually there.<sup>37</sup>

Protective services work cannot be a science, in the sense that every outcome can be made predictable. But past experience and practice cast light on probable outcomes and possible goals.

The limited experience in the field so far has shown that where parents severely abuse their children, there is usually no visible change toward a more constructive way of life as long as the family members remain together. Occasionally, by strong prohibition and active surveillance, outward conformity on the part of abusing parents can be achieved. This is usually a conformity born of fear and suspicion, not of inner conviction. Where the social worker is able to exercise personal authority and not show fear or weakness, he can sometimes control an abusive parent even though his actual law enforcement authority is nonexistent.

#### Child Removal

More progress, however, seems to result from removal of either the abusing parent or the children from the home.<sup>38</sup> Usually the abusing parent does not leave voluntarily, when he does, it is because the social worker's influence has diminished his power. More often, his absence is due to imprisonment either for offenses involving the children or some other activity. Usually by this time, a great deal of damage has already been done to the children. Rehabilitation of abusive parents is a lofty aim, but not usually a realistic one. Time, which measures the inexorable rate of children's mental and physical development, is a major factor with which to contend.

In the case of very abusive parents, we must continue

to look for ways to mutigate the effects of parental actions, short of outright separation between the child and parents. Removal of a child from his home is nearly always an imperfect solution to the problem, but in the absence of alternatives, is preferable to severe suffering and the risk of death. Although a protective services unit will experiment with new approaches, it should not experiment with leaving the child in the home if the danger is imminent and if removal by the Court can be justified. Where the danger is not sufficient for Court action, but where the social worker judges it to be great, there may be room for prudent experimentation.

#### Helping Neglectful Parents

The prognosis for *neglectful* parents is somewhat more hopeful. Compared with abusive parents, neglecting parents are more amenable to counseling and direction from a social worker, especially during their children's early years. As the children grow older, the burden of parental responsibility lessens and these parents are better able to cope without outside help.

Just as the social worker must sometimes use authoritative methods with abusive parents, authority is a tool in working with neglectful parents. Authority should not be seen as punishment. For the neglecting parent, the social worker's authoritative direction may mean a relief from overwhelming responsibilities.

"The psychologically well equipped worker is not afraid to use authority on a positive basis after it has been diagnosed as appropriate for the individual and the function of the agency. Much protective work is simply casework with deeply disturbed or neurotic parents. Caseworkers have had to learn about authority, just as they have had to learn about the principles of 'rights' and 'needs'." <sup>39</sup>

After the social worker has given firm direction and support to the neglecting parent, a recognition of the relationships between cause and effect in day-to-day planning must be built up. The mother who appears unable to realize, that in order to provide breakfast for a child, it is necessary to have milk and cereal in the house is not lacking in intelligence, rather her own needs prevent her from thinking of the needs of her

Young, op cit, p 116
 Hamilton, Gordon, The Theory and Practice of Social Casework (New York Columbia University Press, 1940) p. 289.

<sup>&</sup>lt;sup>57</sup> Overton, Alice, Clinent's Observations of Social Work (St Paul. Family Centered Project, Community Chest, 1959). <sup>38</sup> Young, op. cit., p. 116

children. The social worker, homemaker, or community aide must help her with the thinking and planning process. Similarly, the person who cannot get his children to the doctor often must have someone go along with him. As the client progresses, this kind of support will no longer be necessary.

#### How Parents Can Be Strengthened

Neglecting parents respond well when a homemaker or child care program assumes part of their parental burden. They also often try to use their limited strength to help rather than thwart their children. Neglecting parents may sometimes be indifferent to their children, but with patient help to sustain them during their children's early years, the effects of neglect on the children can be diminished.

Mrs. Schermerhorn, a child welfare consultant to the Los Angeles County Schools, gives an example of a neglectful parent who responded well to the help offered her. This woman, in her mid twenties, had never been married, but had had five children. The first baby was born when she was 13 and was a child of incest.

The woman had never had a chance to mature, much less to learn to be a good parent. Her house was filthy and her children slept on bare urine-soaked mattresses. The plaster on the walls was full of holes where mice and rodents could enter. After being supplied with funds for plaster and paint, Mrs. Schermerhorn recounts that the woman "personally, with her own hands, plastered her living room, papered her living room, painted that place. But she had to be taken a step at a time in order to be taught how to do this. She didn't know." The same woman married for the first time not long after these events.

Even more hopeful are the families where neglect is not so extreme. These will probably make up a large proportion of the cases of a voluntary protective services program, since parents in the very extreme category are more likely to find their way to the Juvenile Court instead. The behavior of less seriously inadequate parents is both less harmful to the children and less deeply rooted in the parents' personality, making protective services more realistically rehabilitative in nature. Often only short term assistance is needed; a change in environment, the mitigation of loneliness, and the offering of practical assistance may tip the balance toward normalcy in some of these families.

Sergeant Shirley Maxwell, of the Los Angeles Police Department, cited an instance where short term protective services in a case of moderate neglect prevented a family's deterioration into full-scale neglect.

When I worked in the Hollywood area . . . I had been working on a Sunday morning and got



a call from a neighbor who, again, would not give her name because she did not want to become involved, but that there had been five children left alone all night long. They were running around the streets and she was afraid something would happen to them, and she thought police officers should come out.

I went out there. The house was a mess, but it was not an unfit home . . . I talked with the oldest boy who was fourteen and asked where his daddy was. His mom and dad were divorced, his father was living out in the valley with a new family, a new wife. The mother had not come home from work the day before and they didn't know where she was. We realize that a fourteen year old responsible child can babysit for a few hours or for a period of time, but this was a combination of things. I mean, the messy house, the fact that the mother hadn't come home, the fact that the children were left alone all night, they were fighting, and there wasn't enough food in the house, that sort of thing.

When the mother returned, she recounted to Sergeant Maxwell that she had been out with one of the men at her office, had a few drinks, and had gone to his apartment; she was very contrite and agreed she could use some help. The Hollywood area had a protective services project at that time.

Sergeant Maxwell referred the family to the Bureau of Public Assistance for protective services. Protective services sent a homemaker to help clean up and plan better care of the home. The social worker discussed the possibility of sending the older boys to live with their father and arranged child care for the youngest child while the mother worked. "With the help of the worker from BPA, who came into the home to help the mother work out her problems, we were able to salvage that family unit," Sergeant Maxwell reported.

The experience of the demonstration projects and the results of several national studies of protective services have shown that approximately two-thirds of the families served improve sufficiently to make formal Court action unnecessary.<sup>40</sup>

\*\* Cheney, Kimberly, "Safeguarding Legal Rights in Providing Protective Services," Children (May-June, 1966) p. 86.

### **Recurring Issues**

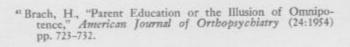
In addition to successes, protective services will have its share of frustrations. Most families will not be coming to the welfare department with a problem, asking for assistance. The social worker may have to go to the client's home, even though the latter has not sought his help and considers the worker a pest or a nuisance.

Some cases will respond very slowly. When the social worker is called at all hours of the day and night because of emergencies in the same family—the husband is drunk, the daughter is pregnant, the son has run away from home—he may wonder when it will ever end or whether he will ever be able to do anything for this family.

In other cases, protective services will not help, and the worker will just have to withdraw and hope for the best rather than risk aggravating the situation. Social workers must be aware that an offer of services, however well-motivated, may be interpreted as punishment or interference in intimate family relationships. There may be times when home conditions are marginal, but when intervention might be premature or harmful because it intensifies parental defensiveness and lack of self-confidence. Care must be taken that parental counseling not burden parents with reinforcement of their self doubt and guilt about their care-taking ability.<sup>41</sup>

The fact cannot be overlooked that in some parents hostility is aroused by anything that would alter the family pattern on which their own morbid sense of well-being depends. The rights of parents cannot be used as a rationalization against the duty to provide appropriate care for children. On the other hand, due process must be observed and rights to privacy cannot be abridged without legal authorization.

If the parent refuses to deal with the protective services worker, even after repeated efforts, the worker must either recommend legal action to the appropriate agency if the evidence warrants it, or wait until the situation deteriorates to the point where a legal judgment, with legal safeguards for the child as well as for the parent, can be made. In the growth of concern over the need for child protective services, adequate legal procedures must not be overlooked.





The world of a neglected child

#### False Reports

A protective services unit, like any other agency accepting complaints, will be subject to false reports. Resentful neighbors, disgruntled mothers-in-law, and divorced fathers whose ex-wives have custody of their children may give protective services exaggerated reports of the parental mishandling of youngsters. Some complainants will judge parents according to rigid, perfectionist standards and, then, will demand drastic and immediate action from the protective services unit. Social workers must be able to judge the reliability of the complainant's statements as well as those of the parent. Here is one example of a report of improper supervision of a child "A neighbor complains that a neighborhood child has broken into her home and vandalized the interior. Police interviews determine that the child in question had been invited in to the home by the complainant's child, and together they had marked up the walls with the crayons belonging to the complainant's child." 42

Finally, the most difficult task for the protective services worker and for the welfare agency for which he works will be drawing the line between parental imperfections, which are universal, and activities which are sufficiently harmful to children to warrant public concern and expenditure.

"Neglect" and "abuse" are concepts which permit no degree of certainty, either in legal definition or social application. There is no general agreement on the fundamental question of what standard of care the law and the community require of parents. Even if there were general agreement among professionals, no precise definition would be possible.

The worker who knows this can guard against some common pitfalls. He must be aware of his own cultural biases in judging neglect in families from subcultural groups other than his own. In assessing the very important and difficult area of *emotional* neglect, the worker must take particular pains to be objective and fair, without losing his sensitivity and empathy toward the parent or the child. Protective services should not intervene into family life, regardless of parental behavior, unless there is evidence that the parent's behavior adversely affects the child A child's parents, for example, may be living together out-of-wedlock, but the child may not be harmed by this and may not even be aware of it.

#### **Judgment** Needed

Some guides for determining the need for protective services were mentioned in Part I. The severity of

the parental action or inaction in terms of its effect, or probable effect, on the child is one guide. The duration and repetitiveness of the parental behavior is another. Parental intent is important only insofar as it affects the outcome for the child and the outlook for working with the parent. For example, a parent who deliberately calculates to starve his child is more likely to achieve that result than a parent who forgets to feed his child, hence intent makes the situation more critical for the child; at the same time, the likelihood of reversing this behavior is greater for the parent who starved unintentionally than for the one who did so intentionally.

The age, mental ability, and physical condition of the child also are factors in determining whether he is in need of protection. An older child may be able to fend for himself or even to escape a wrathful parent, but a young, mentally deficient, or physically disabled child needs more parental attention and is less able to defend himself from parental abuse.

A determination of the need for protective services usually rests not on one factor or one behavior on the part of the parent, but on a variety of factors. The worker must use judgment in weighing these factors and in considering compensating circumstances which may counteract their effect. A child may be able to withstand physical punishment and even occasional abuse if his parent is quick to forget his wrath and is generally affectionate. The child's own behavior and reaction patterns are important in assessing the damage done by parental actions. If a child is withdrawn, peculiar in behavior, overly aggressive, or delinquent, there is more need for intervention than if the child's behavior is normal, however obvious parental inadequacies appear to be.

Even though all the answers—on what protective services are and how effective they are—are not in, the answers are sufficient and the need is sufficiently critical that a program must begin now. As the program operates, facts and concepts can be refined and information gathered for a better evaluation. Without a program, speculative research can go on forever, with a program, research can be useful and realistic. Certainly, ongoing research and evaluation should be part of any statewide protective services plan.

<sup>&</sup>lt;sup>42</sup> National Study Service, op. cit., p. 38.

## **Necessary Auxiliary Services**



Imposing city skylines bide pockets of neglect

Social workers cannot solve the problems of abused and neglected children by themselves. They need the assistance and skills of other practitioners.

Homemaker service is one of the principal auxiliary services which can make it possible for children to live with their own families in spite of the absence, incapacity, or borderline competence of the mother. A homemaker is a mature, specially trained woman with skills in homemaking and child care who goes into the home under the supervision of a social worker to carry out specific responsibilities. Her principal functions, which vary according to the particular family situation, include: taking over or assisting to run the household; teaching the mother to care for the children and the home by encouragement and example; and observing family interaction for the benefit of later planning with the social worker.

One criticism of homemaker service has been its high cost, usually between \$20-\$27 per day for a 24 hour day, and from \$1.50 to \$2.50 per hour on an hourly basis. Although the average cost per child per day in families served by homemakers was \$5.00 in one county, the cost of maintaining these same children in a shelter or receiving home would average \$10.40 per day. The homemaker service is not only a good financial investment, but is a way of beginning parental rehabilitation and of avoiding children's shock and upset at being removed from their home.

If children are to be removed from their own homes, either involuntarily by the Court or voluntarily at parental request, good foster homes must be found. One of the duties of a protective services worker is to recruit and train foster parents who can help children who are partially damaged and who can handle their parents when they visit as well. A reservoir of

foster homes, especially of those equipped to deal with disturbed youngsters, is essential to a good protective services program. Too often, children must remain in a damaging home environment or be placed in an institution because foster homes simply are not available. The need for this type of care is especially acute where children are abandoned, where the parents request removal of the children, or where the mother is incarcerated or hospitalized. All too frequently foster homes are hastily recruited and foster parents are not adequately prepared for the children they receive. The results under these circumstances are unhappy for all concerned. The child removed from his own home should be guaranteed that he is going to a better situation.

Not only are foster homes needed, but special group homes for older children must be developed. There should also be neighborhood emergency shelter homes, where children can remain temporarily without the major disruption to their lives that placement in a large institutional shelter implies. Family shelter care is especially important for infants and small children who need a close relationship with a single, motherly adult. The Committee recommends a study of foster home care as part of a general study of standards in out-of-home care for children, in both publicly and privately operated facilities.

Protective services units may want to try experimenting with such methods as group discussions, where parents with common problems in providing for their youngsters can discuss their personal situations, exchange views, listen to an expert on nutrition or child care, and just plain socialize.

<sup>48</sup> Ibid., p. 54.

## Other Related Services

Protective services itself cannot provide all the auxiliary services needed to prevent the mistreatment of children. But a protective services unit has an obligation to refer parents to other community resources, such as special programs for retarded and physically handicapped children or free school lunches for low income children.

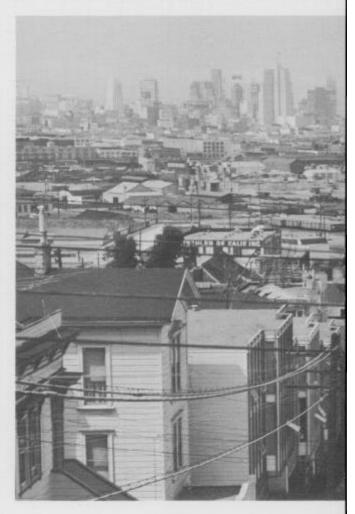
One of the greatest preventive and rehabilitative services for children is day care. Under the generic term day care, we are including preschool programs, after school care, and recreation. These programs, particularly when they seek to involve the parents, can enrich the lives of children and counteract many deficiencies in parental care. More day care programs are needed for working mothers who cannot afford commercial care. Seasonal workers, especially farm workers, desperately need day care for their children. Day care is also a treatment resource to provide emotional and physical relief for both mothers and children during periods of family crisis or where children have special physical or mental problems. The best kind of day care for infants is in a family home where they receive individual attention.

S. T. Cummings stresses the importance of "community resources for treating and rehabilitating deficient children and for integrating them into its economic and social life," in order to help the parents of mentally retarded, emotionally disturbed, and physically ill children to cope with the parental task.<sup>44</sup>

Also in the context of prevention and treatment, adoption agencies must continue to seek homes for children of minority racial background and those with physical and mental defects. These children, along with older children who have been abandoned by their parents and declared free of parental custody and control, are often difficult to place, even though they are technically adoptable. Better counseling is needed for unmarried mothers who keep their children, counseling aimed at equipping them for family life and child care without a husband's assistance. Several Catholic agencies have experimented along these lines with the goal of preventing child neglect later on. Too often, the unwed mother who decides to keep her baby is cut off from counseling services and is merely referred to public welfare for financial assistance.45

In order to effectively fulfill their role in the child protective field, private and public child care institutions have a special obligation to provide inservice training for their staffs. Since these institutions are often the only resources available on an emergency basis, there must be assurance that conditions are an improvement over the homes from which the children came. A review of private institutional licensing standards by the Committee is in order, as well as an examination of their applicability to locally operated public facilities for the care of minors.

Another preventive measure would be the increasing of public assistance grants, particularly in AFDC. The National Study Service, in its study of protective services, gives particular attention to the low housing allowances in the AFDC program,<sup>46</sup> which make adequate housing difficult to obtain and which cut into



the minimum allowances provided for food and clothing.

The community also has a responsibility. Private associations, church groups, and voluntary mothers' groups can help in the task of prevention by seeking out isolated families who seem to have no close relationships. Vulnerable individuals, such as newcomers, military families, and mothers with several small children need to be made aware of existing services which will make their tasks easier.

There are some hopeful signs on the horizon which should lighten the burden of protective services. One is the growth of the community mental health movement in California, with its emphasis on preventing institutionalization. Another is the development of the state Medi-Cal program, which makes medical services available to many low income children and their families. A third hopeful sign is the growth of associations for minority and underprivileged people. Although such associations have some disquieting aspects, they are an expression of hope, ambition, and rising expectations. Through association with others in seeking what they consider just goals, a number of minority group members have shed the fatalism and apathy which made them neglectful parents. They can now be good parents because they have hope for their children and a reason for living.

"Cummings, S. T., et al. "Effects of the Child's Deficiency on The Mother: A Study of Mothers of Mentally Retarded, Chronically III and Neurotic Children," American Journal of Orthopsychiatry (July, 1966) p. 607.
 Wessel, Morris, "A Pediatrician Views Adoption and Unwed Adolescent Parenthood", Child Welfare (June, 1966) p.

40 Ibid., p. 58.



The community also has a responsibility

## Conclusion

There is need for immediate attention to the problems of abused and neglected children. Many of them are in danger of death, permanent crippling, and brain damage, not to mention the emotional crippling which will make them unhappy persons and harmful to their own children in turn. Time is of the essence if they are to be saved.

The family in modern society has ceased to provide entirely for the basic needs of children in terms of education, the development of skills, and protection from physical and emotional neglect. The public must now reach out to families with the problem-solving approach of protective services. The objective of protective services is to strengthen parents in their ability to meet the needs of their children, and to substitute for the parents in those areas where they cannot be strengthened.



Vital need: A place to play

## Recommendations

- 1. The Assembly Committee on Social Welfare recommends the establishment of a statewide protective services program for children, extended to all children in need of protection, regardless of family income. This recommendation would complete the policy initiated by the Legislature in the 1966 Budget Session, when it established responsibility for statewide adult protective services in the State Department of Social Welfare.
- 2. The Committee recommends the maximum utilization of available federal funds in support of this program. The Committee also urges Congress to pass enabling legislation to more adequately assist states in the child protective field.
- 3. The Committee recommends that protective services be organized on a county, regional, or state basis, so that by 1972, they shall be available to every community in California.
- 4. The Committee recommends that the services offered to families under this program shall be voluntary, with an emphasis on keeping children in their own homes. Although the protective services program itself will not have law enforcement powers, it is recommended that there be a close relationship with police and probation departments and that prompt attention be given to referrals from these sources.
- 5. Since a protective services program requires quality substitute care for those children who cannot remain in their own homes, the Committee recommends an examination of standards in all public and private child care facilities in the state, both foster homes and institutions.
- 6. The Committee recommends the establishment of specialized inservice training for all personnel working in the child protective field. Special training should be offered not only to professionals, but to homemakers, child care workers, foster parents, and indigenous aides.
- 7. The Committee recommends that the State Department of Social Welfare have the responsibility for (1) ongoing evaluation of the program, (2) broad research into the incidence of child neglect and abuse and the results of the various methods used to combat it, and (3) coordination of the protective services program with related activities in probation departments, the Youth Authority, the Bureau of Criminal Identification and Investigation, the Department of Education, the Department of Mental Hygiene, and the Department of Public Health. The Department of Social Welfare would report annually to the Legislature on the operation and progress of the protective services program.

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Assembly Interim Committee Report 1965–1967 Volume 19—Number 15

**VOLUME 25** REPORT 6

#### CALIFORNIA LEGISLATURE 1965-67

#### Report of the

### ASSEMBLY COMMITTEE ON NATURAL RESOURCES, PLANNING, AND PUBLIC WORKS

#### PART V

## HIGHWAY BEAUTIFICATION BEAUTIFICATION AND MAINTENANCE OF THE CAPITOL MALL HIGHWAY AND FREEWAY PLANNING REGIONAL PLANNING IN THE LAKE TAHOE BASIN THE FILLING OF SAN FRANCISCO BAY

Members of the Committee

EDWIN L. Z'BERG, Chairman CHARLES WARREN, Vice Chairman

ALFRED E. ALQUIST BURT M. HENSON STEWART HINCKLEY CHARLES W. MEYERS

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E. RICHARD BARNES

LOU CUSANOVICH

ANTHONY BEILENSON

January 1967

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#### Published by the

# ASSEMBLY OF THE STATE OF CALIFORNIA

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#### LETTER OF TRANSMITTAL

#### California Legislature

Assembly Committee on Natural Resources, Planning, and Public Works

EDWIN L. Z'BERG Chairman

January 2, 1967

Honorable Jesse M Unruh
Speaker of the Assembly, and
Honorable Members of the Assembly
State Capitol
Sacramento, California

Gentlemen

The Assembly Committee on Natural Resources, Planning, and Public Works submits herewith Part V of its report to the Legislature on 1965-67 interim studies. The first four parts are devoted to recreation planning and management, the management of redwood resources, forest practices and watershed management, and the development of marine resources and beach erosion and protection, with this part of the series outlining the committee study of the following subjects:

Highway beautification
Beautification and maintenance of the Capitol Mall
Highway and freeway planning
Regional planning in the Lake Tahoe Basin
The filling of San Francisco Bay

Each of these matters, while differing in scope and degree, is of importance to the orderly, long-range development of California, and is illustrative of the increasingly complex problems of responsible environmental and resources planning and management posed by the state's rapidly growing population. Three of these subjects—highway and freeway planning, regional planning in the Lake Tahoe Basin, and the filling of San Francisco Bay—were studied in great depth by the committee during the 1963-65 interim period, and a number of recommendations were made for new or modified public policies in these areas. This report reviews the essence of these recommendations, outlines the progress which has been made toward their implementation, and the proposals remaining to be effectuated. Two additional 1963-65 studies of continuing interest to the committee—the administration of tide and submerged lands, and riding and hiking trails—will be included in the separate parts of this report dealing with the development of marine resources, and recreation planning and management.

The attached report presents a brief review of each problem area and sets forth the general conclusions and recommendations of the committee for the legislation which seems indicated. These conclusions and recommendations are the result of a series of public hearings and additional independent research conducted during the interim period.

The committee expresses its deep appreciation to the many organizations, public officials, and private citizens who contributed so generously and responsibly to these studies. They should feel a sense of participation in any resulting improvements in public policy.

Respectfully submitted,

Edwin L. Z'berg, Chairman Charles Warren, Vice Chairman

ALFRED E. ALQUIST E RICHARD BARNES ANTHONY BEILENSON LOU CUSANOVICH BURT M. HENSON STEWART HINCKLEY CHARLES W. MEYERS GEORGE W. MILIAS WINFIELD SHOEMAKER PEARCE YOUNG

#### HIGHWAY BEAUTIFICATION

#### BACKGROUND

The preservation, restoration, and enhancement of scenic values along roadways is an important dimension of the increasing national awareness and concern over the impact of rapid population growth on both the urban and natural environment. This concern has resulted in the formulation and adoption of a number of significant new federal, state, and local policies in recent years in such areas as the control of outdoor advertising, the screening or removal of junkyards, the acquisition of scenic easements, the establishment of roadside rests, improved landscaping both within and beyond the right-of-way, and the designation, protection, and construction of scenic highways and parkways

The major impetus for many of these programs derives from the 1958 federal legislation which provided a bonus of federal and highway funds to those states enacting expanded controls over outdoor advertising along the interstate highway system. As the result of intensive study of the subject, the committee recommended enactment of the Collier-Z'berg Act of 1964, which, based on the need to restore and preserve scenic resources and urban amenities and contribute to increased traffic safety, established the principle of expanded control of outdoor advertising in California by regulating advertising along interstate highways Enactment of this legislation qualified California for an estimated \$8 million in additional federal highway funds annually.

In 1965 the Legislature considered proposals to extend the provisions of the Collier-Z'berg Act to the entire state highway system However, prior to final action new and greatly expanded legislation applying to interstate and primary highways was introduced into the Congress, and strongly supported by the President as part of his program developing from the 1965 White House Conference on Natural Reauty Passage of this federal legislation not only provided for a strengthening of the control of outadvertising along the interstate system, but also Lieuded these regulations to primary highways, inhe expenditure of additional funds for highway ... Lifeation including the acquisition of scenic ease-A key difference from the 1958 law was the equirement that states conform to the provisions billboard and junkyard control by 1968 or they would begin to lose up to 20 percent of annual fedal highway funds, which in California could \_\_\_to \$70 million annually.

Responding to these new requirements, the 1966 regislature enacted legislation authored by Assembly-Z'berg—and coauthored by Senators Collier and air—establishing controls over junkyards along the 000-mile interstate and primary highway system, i qualifying California to receive additional fedal funds amounting to 3 percent of the annual fedal allocation for highway beautification and the achieum of scenic areas adjacent to interstate and imaly highways, which could amount to \$10 mil-

lion annually in California. Action on the strengthening of controls over outdoor advertising was deferred pending further review.

Under the provisions of this legislation, the Department of Public Works was requested to submit a report to the 1967 Legislature outlining the progress made and program developed for the acquisition of scenic areas, including the critical and standards to be used in the acquisition of these areas. In November 1966 this committee held a joint public hearing with the Senate Committee on Transportation to consider both the scenic areas program and the expansion of controls over outdoor advertising

#### FINDINGS AND CONCLUSIONS

While further consideration of the scenic areas program will await the report of the Department of Public Works to the Legislature, the committee reaffirms the basic findings and conclusions relating to the control of outdoor advertising contained in its 1965 report as follows:

"Based on the need to restore and preserve the scenic resources of California and contribute to increased traffic safety, the Committee finds a clear requirement for expanded regulation of outdoor advertising along the state and interstate highway system in California. The committee concludes that this principle was recognized by the State Legislature with passage of the Collier-Z'berg Act, and that because the safety and wellbeing of the public should receive first consideration on all state thoroughfares, that subsequent legislation should extend the provisions of the Collier-Z'berg Act to the entire state highway system."

The committee finds further that the Legislature should strengthen the existing controls on the interstate system in accordance with the standards set forth in the Federal Highway Beautification Act of 1965, and extend them as appropriate to the balance of the state highway system Because of the potential problems and precedents which may arise from the mandatory payment by the states of compensation for the removal of nonconforming outdoor advertising presently required by federal law the committee finds it clearly in the public interest that state legislation stipulate that the payment of such compensation will be made only insofar as it is required by federal law.

#### RECOMMENDATIONS

The committee recommends that the provisions of the Collier-Z'berg Act of 1964, and the relevant provisions of the Federal Highway Beautification Act of 1965, pertaining to the control of outdoor advertising along state and interstate highways, be extended as appropriate to the balance of the state highway system in California

#### BEAUTIFICATION AND MAINTENANCE OF THE CAPITOL MALL

#### **BACKGROUND**

California is the number one state in the Union by numerous indices, and is world-renowned for the unique and varied character of its natural resources and colorful history. With a gross income exceeded by that of only five nations—the United States, Russia, Great Britain, West Germany, and France—and a population 18 million expected to double by 1990, it is clear that California will continue to maintain and enhance its reputation and influence on the national and international scene.

Viewed in this perspective, it seems beyond dispute that the capital city of California should reflect in special measure the vitality, imagination, affluence, prestige, and beauty for which the state is noted, and in its design should be an expression of the best the state can produce in coordinated environmental planning and architectural integrity. Its special role as a place of importance and interest to all the people of California, as well as to an increasing host of national and international visitors, elevates the City of Sacramento from being just the largest city in Sacramento County—and the Great Central Valley—to its special position as capital of the number one state in the United States

The uniqueness of its natural setting—in a lush valley at the confluence of two great rivers close to the Mother Lode of the Sierra Nevada, a place which witnessed the shaping of the West in the excitement and confusion of the 1848 gold rush-provides the opportunity, and challenge, to create an unusual and beautiful capital city. While the foresight of the early Capitol planners in creating the magnificent Capitol Building itself, and the surrounding Capitol Park, and relatively recent programs such as the Capitol Area Master Plan and the Redevelopment Project for the Central City, are contributing to the promise of a beautiful and pleasant environment in the immediate vicinity of the Capitol, insufficient attention has been given to the creation of an inspiring and handsome western approach to the Capitol Complex This deficiency in overall Capitol planning is particularly unfortunate because the geography of the western approaches—beginning at the point some miles away where the glinting gold or glowing lights of the Capitol dome are first glimpsed by the traveler, and culminating at the Tower Bridge with its full view of the Capitol Complex itself—provides a rare opportunity for a dramatic and impressive entrance possessed by few other cities in the world With the increasing monotony and drabness of our great cities becoming a phenomenon of worldwide concern, the opportunity to "arrive" at a beautifully planned metropolitan complex could be a matter of special pride to Califormans—and envy to visitors

There have been numerous efforts in the past to create a more beautiful and architecturally harmonious Capitol Mall, with specific proposals dating as far back as 1913 However, the concept of defining and master planning the space needs of the state government Capitol Complex—of which the mall is now

proving to be an important element—was not generally recognized until the middle and late 1950's By this time the original Capitol Building and the Entrance Court formed by State Office Building No 1 and the Library and Courts Building, coupled with the Education, Personnel, and Employment Buildings, framed the castern end of the mall complex, with the Tower Bridge (completed in 1936) forming the western axial terminus

In 1959 the Legislature created the Capitol Building and Planning Commission with passage of one of the first major bills authored by Assemblyman Edwin L Z'berg, who now serves as chairman of this committee Under this legislation the commission prepared and submitted a master plan to the 1961 Legislature to guide the long-range development of the entire Capitol Complex This plan, which was formally adopted by the Legislature, basically recognized the status quo with respect to the eastern terminus of the mall, and recommended that future expansion of the State Capitol Complex be generally between 7th and 17th Streets, and south of the Capitol Park and existing state buildings

During the same period the Sacramento Redevelopment Agency initiated its mall building development project west along Capitol Avenue from the Seventh Street terminus of the state building complex to the Tower Bridge over the Sacramento River This project, which has been made possible by the active cooperation and participation of the City of Sacramento, the federal government, and a number of private developers, is replacing slums and blighted buildings with a series of handsome, architecturally imaginative buildings representing major investments by private industry. The character of building design coupled with the 40-foot setback is extending the concept of a monumental boulevard approach from the west to the symbolic State Capitol Building.

In the course of this Capitol Mall development, active interest in the prospects for heautification resulted in the formation of an informal citizens advisory committee to explore various alternatives. The specific programs resulted from these efforts. First a cooperative program among the state, city, and Redevelopment Agency enabled reconstruction and land scaping of Capitol Avenue from Ninth Street to "Tower Bridge, and, secondly, three specific beautification proposals were developed by the State Divior Architecture and Highways. These proposals which included walkways, fountains, and reflections in the median strip of Capitol Avenue, stimulated considerable interest but have proved impossible to finance.

Additional proposals for surface beautification have been prepared by Leo A. Daly Company at the request of Mr. Charles Brown, a private developer the mall, but the lack of funds has precluded implementation.

#### THE NEED FOR ACTION

The recent designation of the new Pioneer Memorial Bridge on Interstate 80 as the official state 1.

from the West into Sacramento, and the impending relinquishment as a state highway of the previous route from Westacres Road in Yolo County to Ninth Street in the City of Sacramento have brought into focus the entire problem of long-range maintenance and beautification of the Capitol Mall. This is because the abandonment of the route as a state highway will reduce its status to that of a county road in Yolo County and a city street in the City of Sacramento, which will shift the entire-and costly-burden of maintenance to local government. The consequence of this action will be to require local government to allocate a disproportionate share of its street maintenance funds to maintain even the present appearance of the roadway, and, as this course is not likely to be elected, a deterioration will inevitably take place, when the objective of all plans and programs is for long-range enhancement of beauty and utility of the Capitol Mall

In order that the overall effect of this prospective route relinquishment might be reviewed in depth, the Legislature requested the State Highway Commission to withhold action until the last day of the 1967 session. Based on intensive review of this problem during the 1966 interim, during which the committee studied the views of all agencies and organizations with any interest in mall planning and development, the committee has reached the following conclusions.

#### FINDINGS AND CONCLUSIONS

- 1. There is clear justification and need for the creation of a beautiful and impressive western approach to the capital city of California, which coordinates and integrates the planning and development of all major elements in the immediate environment, and emphasizes the most important single structure in the complex—the State Capitol Building
- 2 The abandonment as a state highway of the roadway between Westacres Road in Yolo County and Ninth Street in the City of Sacramento will likely result in a serious decline in the existing appearance of the Capitol Mall, and consequently action should be taken to retain this segment as part of the state highway system for maintenance purposes
- 3 In order to provide for the formulation and implementation of a long-range, funded program for beautification of the mall, which is coordinated with the plans of the multiplicity of interests involved, it will be necessary to assign responsibility and authority sufficient to achieve these objectives to a single agency Based on the general agreement of all those presenting testimony, the committee concludes that the agency most able to effectively earry out this assignment is the Capitol Building and Planning Commission

#### RECOMMENDATIONS

To provide for a long-range, coordinated, funded program of maintenance and beautification of the Capitol Mall, the committee recommends the following:

- 1. The 1.7-mile segment of state highway between Westacres Road in Yolo County and Ninth Street in the City of Sacramento should be retained in the state highway system for continuing maintenance by the State of California, and the attendant advantages of maintaining single ownership
- 2. To qualify the state for all possible federal highway beautification financial assistance—such as that available under the Highway Beautification Act of 1965—aggressive efforts should be initiated to include this route as part of the federal and primary highway system,
- 3. One agency—the Capitol Building and Planning Commission—should be assigned the overall responsibility and authority for the formulation and implementation of a longrange master plan for the improvement of the Capitol Mall which is integrated and compatible with the development plans of all appropriate public and private interests, including the Sacramento Central City Development Projects. The principal objective of this master plan should be to provide a physical and aesthetic expression in the approaches to the State Capitol Complex which reflects the vitality, imagination, affluence, prestige, and beauty of the number one state and embodies the best the state can produce in coordinated environmental planning and architectural integrity. In order that this objective can be realized a number of specific actions will be required, including
  - a. The official designation of the state highway between Nmth Street and Westacres Road as "The Capitol Mall" and incorporation if feasible as an integral unit of the Capitol Area Master Plan
  - b. The strengthening of the responsibility, authority, and support of the Capitol Building and Planning Commission, including
    - Assignment of sufficient responsibility, authority, and budgetary support to formulate and carry out a long-range master plan for improvement of the mall, of the highest architectural integrity, which is coordinated with the development plans of all appropriate public and private interests;
    - (2) Further definition of commission membership to include more balanced, formalized representation from the State of California, the federal government, the Sacramento Redevelopment Agency, the County of Yolo, the major private developers, and the planning, design, and architectural professions
    - (3) Creation of a broadly based advisory body to the commission which will pro-

- vide a means for formalized expression of the views of all public and private organizations and individuals interested in the character of mall development and improvement This advisory body, to be named the California State Capitol Mall Advisory Committee, should include, for example, representatives of the State Departments of General Services, Highways, Finance, and Office of Planning, the local chambers of commerce, planning and architectural groups, and interested members of the public at large
- (4) Recognition of the need for administrative support to carry out these enlarged commission responsibilities by creation of a full-time executive officer. the payment of per diem and expenses to the members for meetings of the commission, and authority for the commission to contract directly with the appropriate governmental agencies for planning and construction grants, and public and private organizations for planning and architectural studies and other sources.
- 4. With the assumption by the state of the continuing maintenance of the street surface and landscaping and beautification improvements on the state highway portion of the officially designated Capitol Mall, including operation and maintenance of the Tower Bridge, and by the other public bodies and private developers for maintenance of their respective holdings, the major remaining need for financing will be for the preparation and continuous updating of the master mall development plan by the commission, and the construction of those improvements of signficance to the character of the entire mall and whose costs and benefits are not directly allocable to any single interest or closely related group of interests. In order to provide dependable sources of financing for these elements of mall planning and development, the following specific actions will be required
  - a. Continuous review of all possible sources of federal funding, including highway and urban planning and beautification programs, accompanied by timely and aggres-

- sive application by the state—and budgetary support where matching funds are required.
- b. Formulation of cooperatively funded programs among all mall interests for mutually agreed-upon improvements of benefit to the entire mall, and for which no other sources of financing can be obtained

#### WITNESSES APPEARING BEFORE THE COMMITTEE OR SUBMITTING STATEMENTS

- MRS EDMUND G. BROWN, Cochairman, Governor's Action Advisory Committee on California Beauty
- MR FRANK B. DURKEE, Chairman, Sacramento Redevelopment Agency
- MR. ROBERT B. BRADFORD, Administrator, California Transportation Agency, represented by
  - a MR EMERSON W. RHYNER, Deputy Chief, Division of Contracts and Rights of Way, Department of Public Works
  - MR DONALD VAN RIPER, Principal Landscape Architect,
  - Division of Highways, Department of Public Works c. Mr Lee Windhelm, Leo A. Daly Company, San Fran-
- MR. ALBERT W. DREYFUSS, Chairman, Capitol Building and Planning Commission
- Mr. HALE CHAMPION, Administrator, California Revenue and Management Agency, represented by
  - a. DR LESLIE E CARBERT, State Planning Officer
  - b Mr. Arthur W. Collins, Assistant Director, Department of General Services
  - c. Mr. Roy M. Bell, Assistant Director, Department of Finance
- HONORABLE EUGENE T. GUALCO, Chairman, Sacramento County Board of Supervisors
- HONORABLE WILLARD NEWSEN, Councilman, City of Sacramento, representing the City of Sacramento, and the following private developers
  - Crocker Citizens National Bank
  - Wells Fargo Bank
  - Sacramento Union
  - d. George McKeon Construction Company
- e. Me Charles Brown, Developer of IBM Building HONORABLE JAMES W McDERMOTT, Chairman, Yolo County
- Board of Supervisors MR ROY A GREEN, JR. Chairman, Highway Committee, Sacramento City-County Chamber of Commerce
- GENERAL JACK B LINDEMAN, President, Yolo County Chamber
- MR RICHARD GRAVES, West Coast Vice President, Tishman Realty and Construction Company
- MRS HELEN B REYNOLDS, President, California Roadside Council
- MR WILLIAM PENN MOTT, JR, General Manager, East Bay Regional Park District

#### HIGHWAY AND FREEWAY PLANNING

#### BACKGROUND

During the 1963-65 interim period the committee conducted an in-depth analysis of the policies, procedures and criteria governing highway and freeway planning by the state, with special emphasis on the relationship of this process to environmental, land use, and resources planning and management. In the course of this review the committee studied in detail several of the more celebrated freeway controversies in California, and in public hearings in Prairie Creek Redwoods State Park, San Francisco, Santa Monica, Beverly Hills, and Sacramento received testimony from over 100 witnesses with specialized knowledge of each problem area.

Based on this exhaustive record, the committee issued a widely studied and commended report which contained the following findings and conclusions:

- 1. Under existing administrative organization and procedures, primary emphasis in the evaluation of routing alternatives appears to be on engineering considerations and construction and so-called user costs. Although it is difficult to establish precisely, and major differences of opinion developed between the highway Transportation Agency and affected interests as to the exact degree of consideration given to other factors such as community values, adjacent land values. effect on local tax rolls, and historical, recreational, aesthetic, and park values, the burden would appear to rest on the highway Transportation Agency for three reasons (a) if indeed all values are considered in the valuation of routing alternatives, the conclusions are not always presented to the affected interests in a meaningful manner; (b) the organization structure, staffing, and administrative procedures of the highway Transportation Agency and State Highway Commission—in which decisions at every level of the administrative hierarchy within the agency are considered and made by engineers—do not inspire confidence in the capacity of the agency, even if it indeed so does, to consider non-engineering and noncost factors in a truly signficant way, and (c) in reviewing several specific routing controversies, it appeared to the committee that there were serious questions concerning the efficacy of the agency's consideration of the total impact of a given routing alternative
- 2 In spite of certain amendments to the Streets and Highways Code subsequent to the first report of this committee (notably Sections 210 through 215, added in 1961) establishing as state policy the requirement for close cooperation and coordination between the agency and the governing bodies of areas affected by proposed routings, and the adoption in 1958 by the commission of a revised procedure for route selection, some problems appear to remain with respect to the liaison between the state and the local interests affected In some instances these

difficulties appear to have resulted from inadequate advance information, and in others from an impression on the part of local interests that existing procedures and attitudes precluded meaningful consideration of their concerns

3. Under existing policies and administrative organization, procedures, and staffing of the highway Transportation Agency and State Highway Commission, it appears to be all but impossible for the commission, which holds the statutory responsibility and complete authority for final route determination, to receive any meaningful alternatives to the recommendation of a given route by the State Highway Engineer. This is a particularly significant and sensitive point because, as has been noted previously, the recommendation of the engineer is likely to be based predominantly on engineering and cost considerations, and in most instances it is the end product of a series of decisions made almost entirely by highway engineers within the Division of Highways At no point on the staff of either the highway Transportation Agency or the State Highway Commission, on a formalized, procedural basis, are specialists in other disciplines such as economics landscape and design architecture, fish and wildlife, park and recreation management, history and sociology, agriculture, and urban and regional planning, to name some examples, brought actively into the planning process.

While it is a matter of serious concern that the present planning process within the highway Transportation Agency appears to result in disproportionate emphasis on engineering and cost considerations in route determinations, the public could view this process with greater confidence if there existed an independent review body, so organized and staffed as to ensure full consideration of the total public interest in route adoptions However, because of existing organizational relationships, the State Highway Commission does not meet this need

Because of the significance of these organizational relationships to the route adoption process, the committee feels they should be explored in greater detail at this point

The highway Transportation Agency presently consists of three major departments, one of which is the Department of Public Works The major division within the Department of Public Works is the Division of Highways, headed by the State Highway Engineer. In testimony before this committee, the State Highway Engineer stated: "... it is the function and duty of the division to serve as the technical engineering staff of the Department of Public Works and the California Highway Commission in matters pertaining to the state highway system ... In the route selection process, the division has been delegated the responsibility for developing and analyzing pertinent data, recommending courses of action, and

otherwise assisting the California Highway Commission in the route selection process? It is thus clearly the responsibility of the Division of Highways to recommend given routing alternatives to the Highway Commission.

The State Highway Commission, which is ostensibly a separate, policymaking body with the fundamental responsibilities of precising highway and freeway routes and adopting annual expenditure programs of the Division of Highways, is in fact so tightly bound organizationally and administratively to the highway Transportation Agency as to be in effect a creature of the agency.

This is clearly established by certain peculiar organization relationships—unique in state government—wherein the permanent Chairman of the Highway Commission is also the Administrator of the highway Transportation Agency (which includes the Division of Highways), and the Administrative Officer of the Highway Commission is also the Director of Public Works (which includes the Division of Highways). These ties are completed administratively by the fact that the seven-member commission, which frequently reflects disproportionate representation of certain sectors of the public, has no staff of its own, and as stated above, relies on the Division of Highways for staff assistance

Although individual commissioners may contend that they are able to consider the total public interest in adopting highway and freeway routes, this would appear to be in spite of, rather than because of, existing organizational procedures and relationships, which as has been discussed, provide no formalized method for considering the total public interest within the Division of Highways or for ensuring that it is presented to the commission prior to route adopttion The unfortunate result of this situation, in a growing number of cases, is that interests affected by a given routing alternative, where they are financially able, are forced to rely upon their own resources to present to the commission an alternative to the recommendation of the engineer, and the expense and seeming futility of this process tends to discourage those lacking the resources for independent analyses. Such a situation would not appear to be in the public in-

4 With respect to the powers of the Highway Commission, the committee recognizes and appreciates the need for an independent highway authority with sufficient powers to ensure the orderly progress of the state highway program. The committee also recognizes, however, that the delegation of powers by the Legislature should not be in excess of those required to effect this orderly highway program. In reviewing these powers, the committee concludes that in an least two areas the commission appears to hold authority which is in excess of that reasonably required.

a Section 103 of the Streets and Highways Code provides that a resolution of the commission, declaring that the public interest and necessity requires the acquisition of a given parcel of property, is conclusive evidence that the proposed highway or freeway "is planned or located in a manner which will be most compatible with the greatest public good and the least private injury" The implications of this major delegation of power are manyfold, and are the basis for much of the criticism of California highway policy The fundamental result, however, has been to establish by implication that highways represent the highest and best use of land in Califorma, and the powers of eminent domain may be used to substantiate this if it proves necessary.

The practical consequence of this grant of power by the Legislature is to remove decisions of the State Highway Commission from even the judicial review of the courts, for the California Supreme Court has stated that under this statute the courts may not decide the issue of the necessity of a certain highway location. The committee views this absolute delegation of power, and the lack of any provision for appeal from a decision of the commission, even to the courts, with serious concern. It should also be noted that this power might well be construed as giving the commission an unfair advantage in the route selection process, and may operate to discourage those who might otherwise make a positive contribution

b Section 1035 of the Streets and Highways Code gives the commission the authority to condemn by eminent domain even property dedicated to park purposes, however it may have been dedicated, when the commission has determined by resolution that such property is necessary for state highway purposes. The committee finds this a most extraordinary grant of power, and seriously questions its justification. In spite of responsibility given under the law to the State Park Commission for the protection of state park property dedicated for park purposes, and the implementing policy statements of the Park Commission to hold these lands against the pressures of expediency, which includes highways, it has not been granted the commensurate authority with which to carry out its responsibility. The committee finds it difficult to agree with those who argue that through highways and freeways have little or no impact on park values, but feels that in any event, this decision is not one which can logically and defensibly be made by highway authorities

Recognizing the long-range significance of these conclusions to the cause of urban and recreational development throughout the state, the committee recommended a major reorientation of the highway and freeway planning process as it relates to environmental, resources, and land-use planning, and prepared its report in such a manner as to support continuing

legislation until the major objectives of its recommendations are reflected in new or modified public policies.

The specific recommendations of the committee in its 1965 report were as follows:

- . With Respect to the Planning Process
- 1. The highway Transportation Agency, through its Department of Public Works and Division of Highways, should be specifically directed to consider, in a formalized procedure equivalent to that devoted to engineering and cost considerations, all factors, translated into costs whenever feasible, affected by the location of a highway or freeway, including but not limited to such factors as community values; recreational, aesthetic, and park values; historical values, adjacent land values; impact on local tax rolls; and total projected regional transportation requirements, and a full and complete report thereon be made available to the general public and widely publicized in the area affected no less than 60 days prior to the first scheduled public hearing by the Division of Highways This report should also include the following information.
  - a Comments by the State Office of Planning on the proposed routing alternatives based on its evaluation of the coordination of these proposed routing alternatives with (1) other public works projects, (2) regional transportation requirements, (3) regional recreational needs, and (4) local and regional land use master plans
  - b Comments by the State Resources Agency on the proposed routing alternatives based on its evaluation of the impact of these proposed routing alternatives on the longrange recreational and commercial potential of the natural resources in the area affected.
  - c Cost estimates of all adjacent, connecting, and continuation segments, to preclude the adoption of two connecting 'least expensive'' segments which might, in total, be more costly than a combined alternative through the same area
  - d A presentation of the long-range plans as they are currently known for the highway and freeway network in the region containing the proposed routing alternatives
  - e. Graphic portrayal, by means of sketches and preliminary scale models where appropriate, of selected significant portions of the routing alternatives requested by affected interests, showing the general appearance and basic design features of the highway or freeway as it will appear upon completion of construction Provision should be made to share these costs with the local community

- 2 The requirement that all state highways be laid out on the "most direct and practicable locations as determined by the commission" should be repealed. It should be required that this consideration be given high, but not overriding, priority in the route selection process.
- 3. Prior to the initiation of route selection studies, and during the period of preliminary discussion, general agreement should be reached between the highway Transportation Agency and the local governing board and planning body as to the most logical segment to be studied for route adoption. In the event agreement cannot be reached, provision should be made for formal appeal by local interests to the Highway Commission for final determination.
- 4. To ensure complete impartiality, the public hearing by the Division of Highways should be conducted by an independent hearing officer not on the staff of the highway Transportation Agency
- 5 In the event a public hearing by the commission on a final route adoption is not requested by the local governing body a formalized procedure should be established whereby the commission would be required to hold such a public hearing upon petition of a reasonable segment of the local community. In special situations where route adoptions are of statewide interest or when so directed by legislative resolution, in addition to any hearing in the area affected, the commission should hold a public hearing in one of the recognized population centers of the state
- 6 Upon adoption of a given highway or freeway route, the commission should make a full report available to the general public in the area affected which outlines in detail the basis for the decision
- 7 The highway Transportation Agency and State Highway Commission should review their respective operating procedures to ensure that the policies set forth by the Legislature governing route adoptions, especially those policies contained in Sections 210 through 215 of the Streets and Highways Code, and implemented by procedural resolutions, are being scrupulously and fully observed
  - . With Respect to Organization and Staff-
- 1. To enable the highway Transportation Agency to carry out its broader planning responsibilities, it should be specifically authorized and directed to add specialists to its staff and administrative hierarchy, who by training and experience are qualified to analyze the impact of various routing alternatives on such factors as community, recreational, aesthetic, park, historical, and adjacent land values; local tax

rolls, and regional transportation requirements Such specialists should include, but are not limited to, disciplines such as economics, landscape and design architecture, fish and wildlife management, park and recreation management, history and sociology, agriculture, and urban and regional planning.

- 2. To enable the California Highway Commission to function as an independent policymaking body, with the capacity to consider the total public interest in making decisions on route adoptions, the following organizational and administrative changes should be made:
  - a. The close organizational ties to the highway Transportation Agency should be eliminated by
    - 1 Relieving the Administrator of the highway Transportation Agency of his additional responsibility as Chairman of the California Highway Commission. He may remain as an ex officio member of the commission, not eligible for the chairmanship The chairman should be chosen, as is the usual practice, periodically by vote of the members
    - 2. Relieving the Director of the Department of Public Works of his additional responsibility as Administrative Officer of the California Highway Commission. If an administrative officer is required in addition to the secretary of the commission, he should be appointed by the commission, and should not serve also on the staff of the highway Transportation Agency.
  - b. The close administrative ties to the highway Transportation Agency should be eliminated by providing the commission with a limited, independent staff of specialists in such disciplines as engineering, economics, landscape and design architecture fish and wildlife management, park and recreation management, history and sociology, agriculture, and urban and regional planning This staff should have the basic responsibility of providing the commission with an independent evaluation of all routing proposals of the highway Transportation Agency. Based on the presentations of the agency and all other affected interests, the staff would be responsible for recommending a routing alternative to the commission, or remanding the proposals to the agency for further study
  - c. To make the commission more broadly representative of the total public interest, and to preclude an imbalance of representation, the membership should be geographically based and should represent certain broad areas of society, including, but not limited to, representatives of (1) a county board

of supervisors, (2) a city council, (3) a planning commission, (4) business, (5) labor, (6) conservation interests, (7) the general public, and (8) certain specified disciplines such as economics, architecture, history, engineering

- . With Respect to Powers of the Highway Commission
- 1. Section 103 of the Streets and Highways Code should be amended to change from conclusive to rebuttable the effect of a resolution of the commission stating that the public interest and necessity require the acquisition of a given parcel of property. Such an amendment would provide the opportunity for a decision of the commission to be appealed to the courts, and in such an instance would enable the judicial process to operate in the determination of whether a highway or freeway routing is planned and located in such a manner that will be most compatible with the greatest public good and the least private injury. It would also remove the implied state policy that highways represent the highest and best use of land in California.
- 2. Section 103.5 of the Streets and Highways Code should be either (a) repealed, which would exempt all lands dedicated to park purposes from the eminent domain authority of the commission, or (b) amended to make the exercise of such eminent domain authority contingent on the approval of park administering authorities, which in the case of the state would be the State Park Commission The committee feels that this section is an excessive and unreasonable delegation of power by the Legislature and operates to diminish the exercise of responsibilities placed by law upon other state agencies Ample precedent for amending this statute can be found in Section 1013 which requires approval by the Reclamation Board of any plans by the Department of Public Works for a bridge or other structure across any river or drainage channel or basin under the jurisdiction of the board, and also in Section 1002, which requires the department to enter into an agreement with local authorities prior to closing any city street or county highway with any freeway

Based on these general recommendations, a package of 14 bills was introduced into the 1965 Legislature, of which 12 were passed by the Assembly, six were passed by the Senate, and five were signed by the Governor

This 1965 legislative program was as follows:

#### Legislation Enacted Into Law

AB 1430 Requires the Department of Public Works, upon request of the local governing body, to present a graphic portrayal by sketches or models of

freeway routing alternatives, showing the general appearance and basic design features

AB 1431. Deletes the requirement that all state highways be laid out on the most "direct and practicable" locations as determined by the State Highway Commission

AB 1432. Requires general agreement between the Department of Public Works and the appropriate local agency as to the segment of a proposed freeway to be studied, and provides for an appeal to the State Highway Commission in the event such agreement is not reached.

AB 1433. Requires an independent hearing officer to conduct public hearings of the Division of Highways.

AB 1435. Requires the State Highway Commission to publish a report outlining the basis for adopting a particular freeway routing, detailing the consideration given to driver benefits; community values; recreational, aesthetic, and park values, historical values; property values; impact on local tax rolls, state and local public facilities, city street and county road traffic, and total projected regional transportation requirements

#### Legislation Vetoed by the Governor

AB 1439. Required that one member of the commission be a former member of a city council and one member be a former member of a county board of supervisors. It was amended in the Senate to set broad geographical and background requirements for appointment of commission members.

#### Legislation Not Passed by the Senate

AB 1429 Required a detailed report by the Department of Public Works 60 days prior to the first public hearing on a proposed freeway routing which set forth the effect of each alternative on such factors as community values; recreational, aesthetic, and park values; historical values; adjacent land values and impact on local tax rolls; state and local public facilities; city street and county highway traffic; and total regional transportation requirements, and included comments by the State Resources Agency and State Office of Planning.

AB 1434 Authorized petition by registered voters in the area affected for a public hearing by the Highway Commission as to a proposed freeway location, if the local governing body has not requested such a hearing

AB 1437. Required that the Chairman of the State Highway Commission be annually selected from among the members of the commission rather than being the Administrator of Highway Transportation.

AB 1440 Changed the effect of a resolution by the State Highway Commission respecting the acquisition of publicly owned real property by condemnation from conclusive evidence to a rebuttable presumption

AB 1441 Precluded the Department of Public Works from acquiring by eminent domain any property dedicated to park purposes

AB 1442. Required the Department of Public Works to have the approval of the State Park Commission before acquiring by eminent domain property in the state park system

#### Legislation Held in the Assembly for Further Review

AB 1436 Required the Division of Highways to employ personnel with designated qualifications to carry out broad planning responsibilities

AB 1438. Authorized the commission to employ an independent staff, with qualifications in designated fields, to evaluate highway routing proposals.

Although it is clear that the policies governing highway and freeway planning are of profound importance to the long-range growth and development of the state, as the result of its detailed studies it became apparent to the committee that the problems resulting from the impact of highways and freeways on the environment represent only one dimension of a far more basic problem—the increasingly serious imbalance in long-range planning to meet transporta-tion needs throughout the state The projected doubling by 1980 of California's present population of over 18 million, and the anticipated tripling by 2020, coupled with the growing concern over the ability of freeways alone to solve total transportation demands, can-in the absence of significant policy change-lead to greater controversies, even more difficult of resolution, in the future.

Therefore, as the problems posed by rapid growth become more complex and difficult, it is becoming ever clearer that more comprehensive approaches toward their solution must be developed, and planning, political, and administrative mechanisms must be devised which will deal as inclusively as possible with all interrelated problems

Because of the fundamental importance of transportation planning to the entire pattern of urban and resource development, it is essential that the broadest possible approach be taken toward meeting this requirement Paradoxically, however, California has chosen the opposite course, and has concentrated on providing an extensive-and expensive-network of freeways to serve essentially one mode of mass transportation—the motor vehicle This public policy, which is the result of a complex interplay over the years of public and private demands and federal and state funding, has contributed to a host of related problems—air pollution, urban sprawl, the disruption of the social and economic fabric of numerous communities, the destruction of the amenities of irreplaceable recreational, scenic, and historic resources, the removal of large acreages of land from the tax rolls, and other yet-to-be-precisely-defined social, economic, and emotional problems And, although existing policy clearly contributes to these problems-many of which defy solution at present—at an annual expenditure approaching one billion dollars, traffic congestion frequently remains far ahead of existing and planned freeways, and every projection appears to only compound the problem

It has been suggested that one way of solving thus problem would be simply not to continue the effort to match numbers of motor vehicles with miles of freeways, and the resulting chaos would force fundamental rethinking of transportation planning in California Although this approach may in theory have merit when considering the inefficacy, huge costs, and serious attendant problems resulting from current policy, it is obvious that it is totally unrealistic. However, it is equally obvious that California can no longer afford the luxury of its narrowly conceived, piecemeal approach toward planning in one of its most vital areas of development policy.

It has been estimated, for example, that within the next 50 years the demand for transportation of people and goods in California will increase to in excess of 500 percent and 700 percent above existing levels, respectively. When this huge increase in demand is correlated with the projected growth in land occupancy from 50 percent to 70 percent in the same period, it seems inconceivable that there will be a continuation of the current policy which gives the freeway priority over all other uses of the land resource in California.

In addition to the work of this committee in the planning, developmental, and resource utilization implications of current transportation policy in California, which is detailed in its report on highway and freeway planning, there are numerous other recent developments which are indicative of the gradual change in thinking about this matter

First, most federal legislation (housing acts, federal aid highway acts, etc.) enacted in recent years bearing on this subject contains one or more provisions requiring that comprehensive transportation planning be included in urban planning and coordinated with highway and freeway planning. Although these requirements are significant recognition by the Congress of this need, there is some question as to the overall effectiveness of these efforts.

Second, as a result of these federal requirements, and a growing congestion of regional highways and freeways, at least two formalized comprehensive regional transportation studies (BATS—Bay Area Transportation Study, and LARTS—Los Angeles Regional Transportation Study) are underway, one regional rapid transit program is under construction (BART—Bay Area Rapid Transit), and preliminary planning for some form of limited rapid transit has been initiated in Los Angeles. Although these efforts represent a more comprehensive approach toward this problem, each differs in scope and objectives, and is focused upon essentially regional and local needs.

Third, 1965 legislation, amended in this committee which passed both the Assembly and Senate, and failed of agreement in conference committee by one vote, would have created the "California Transportation Planning Study Committee" This legislation noted that ". The placement of major transportation arterials has profound impact on the environment by irreversibly changing the land and resource use pattern in the immediate vicinity as well as determining the long-term economic growth potential of the area, and it is therefore of fundamental importance that the most comprehensive and meaning-

ful evaluation possible be made of the number and location of regional transportation corridors. ." It further noted that ". . A balanced, efficient, economical, safe, comfortable, and articulated statewide system of mass transportation is of fundamental importance to the well-being of the people, to the orderly and responsible development and preservation of the natural environment, to the statewide tax structure, and to the growth and development of industry throughout California..."

The basic objectives of the committee study were to "... (1) ascertain, within the projected distribution of population statewide, the multimodal transportation requirements for the movement of people and goods, and (2) formulate a balanced plan for integrated, mass transportation utilizing all modes and so structured as to provide for continuous updating and the projecting of future requirements and means of meeting them ..." The study would have included "... the operation, effect, administration, enforcement, and needed revision of any and all laws in any way bearing upon or relating to the subject of this study."

Fourth, in response to the growing concern over this problem, a California Integrated Transportation Study was prepared for the Governor between March and September 1965 by North American Aviation Corporation The conclusions and model study suggested in this report in general support the need for a more comprehensive public policy in this area of state planning and development No further action has been taken on the report as of this time

Therefore, although there appears to be no realistic alternative to the present policy of attempting to meet the demand for freeways throughout California, the time would seem to have arrived for public discussion of the need to broaden the objectives of transportation policy in California, providing for more comprehensive planning in this field, and leading to the development of a statewide transportation system complementing the motor vehicle in the movement of people and goods, providing a choice of modes where one does not now exist, and by the development of transportation corridors throughout the state, contributing to a more orderly urban growth and greater enjoyment and utilization of the state's incomparable natural resources

Subsequent to the 1965 legislative session the Commission on California State Government Organization and Economy (the so-called California "Little Hoover Commission") also reviewed the organizational structure and relationships governing the highway and transportation planning process The conclusions and recommendations contained in the December 1966 report of the commission are very similar to those of this committee which are outlined in this summary

#### **RECOMMENDATIONS**

Based on its exhaustive 1963-65 studies, its 1965 legislative program, and additional continuing review of the problem, the committee recommends the following:

With Respect to the Policies Governing Environmental and Transportation Planning and the Allocation of Natural Resources . . .

The creation of a California Transportation Planning Study Commission to

- a Ascertain, within the projected distribution of population statewide, the multimodal transportation requirements for the movement of people and goods throughout the state,
- b Formulate a balanced statewide plan for integrated, mass transportation, utilizing all modes and structured to provide for continuous updating and the projecting of future requirements;
- c Predict and minimize the impact of the planned transportation arterials on the economic, social, historical, and aesthetic fabric of the affected communities and natural resources,
- d Establish the policies governing the continuous planning, management, and financing of this program.

## With Respect to Planning for Highways and Freeways . . .

- 1. The highway Transportation Agency, through its Department of Public Works and Division of Highways, should be specifically directed to consider, in a formalized procedure equivalent to that devoted to engineering and cost considerations, all factors, translated into costs whenever feasible, affected by the location of a highway or freeway, including but not limited to such factors as community values; recreational, aesthetic, and park values; historical values; adjacent land values, impact on local tax rolls; and total projected regional transportation requirements, and a full and complete report thereon be made available to the general public and widely publicized in the area affected no less than 60 days prior to the first scheduled public hearing by the Division of Highways This report should also include the following information:
  - a. Comments by the State Office of Planning on the proposed routing alternatives based on its evaluation of the coordination of these proposed routing alternatives with (1) other public works projects, (2) regional transportation requirements, (3) regional recreational needs, and (4) local and regional land use master plans.
  - b. Comments by the State Resources Agency on the proposed routing alternatives based on its evaluation of the impact of these proposed routing alternatives on the longrange recreational and commercial potential of the natural resources in the area affected.

- c Cost estimates of all adjacent, connecting, and continuation segments, to preclude the adoption of two connecting "least expensive" segments which might, in total, be more costly than a combined alternative through the same area
- d A presentation of the long-range plans as they are currently known for the highway and freeway network in the region containing the proposed routing alternatives
- 2 In the event a public hearing by the commission on a final route adoption is not requested by the local governing body a formalized procedure should be established whereby the commission would be required to hold such a public hearing upon petition of a reasonable segment of the local community. In special situations where route adoptions are of statewide interest or when so directed by legislative resolution in addition to any hearing in the area affected, the commission should hold a public hearing in one of the recognized population centers of the state.
- 3. The highway Transportation Agency and State Highway Commission should review their respective operating procedures to ensure that the policies set forth by the Legislature governing route adoptions, especially those policies contained in Sections 210 through 215 of the Streets and Highways Code, and implemented by procedural resolutions, are being scrupulously and fully observed.

#### With Respect to Organization and Staffing . .

- 1. To enable the highway Transportation Agency to carry out its broader planning responsibilities, it should be specifically authorized and directed to add specialists to its staff and administrative hierarchy, who by training and experience are qualified to analyze the impact of various routing alternatives on such factors as community, recreational, aesthetic, park. historical, and adjacent land values, local tax rolls, and regional transportation requirements Such specialists should include, but are not limited to, disciplines such as economics landscape and design architecture, fish and wildlife management, park and recreation management, history and sociology, agriculture, and urban and regional planning.
- 2. To enable the California Highway Commission to function as an independent policymaking body, with the capacity to consider the total public interest in making decisions on route adoptions, the following organizational and administrative changes should be made
  - a. The close organizational ties to the highway Transportation Agency should be eliminated by

- 1. Relieving the Administrator of the highway Transportation Agency of his additional responsibility as Chairman of the California Highway Commission. He may remain as an ex officio member of the commission, not eligible for the chairmanship The chairman should be chosen, as is the usual practice, periodically by vote of the members.
- 2. Reheving the Director of the Department of Public Works on his additional responsibility as Administrative Officer of the California Highway Commission. If an administrative officer is required in addition to the secretary of the commission, he should be appointed by the commission, and should not serve also on the staff of the highway Transportation Agency.
- b. The close administrative ties to the highway Transportation Agency should be eliminated by providing the commission with a limited, independent staff of specialists in such disciplines as engineering, economics, landscape and design architecture, fish and wildlife management, park and recreation management, history and sociology, agriculture, and urban and regional planning. To ensure that this independent staff is kept to the absolute minimum, the commission should also be given the authority to contract for independent professional consultants in various disciplines to review proposed routing alternatives on a project by project basis. This staff should have the basic responsibility of providing the commission with an independent evaluation of all routing proposals of the highway Transportation Agency. Based on the presentations of the agency and all other affected interests, the staff would be responsible for recommending a routing alternative to the commission, or remanding the proposals to the agency for further study The cost of this additional review process is immeasurably small in view of the huge, continuing public investment in highways and freeways, and the profound effect their location has on the quality of future life in California.
- c To make the commission more broadly representative of the total public interest, and to preclude an imbalance of representation, the membership should be geographically

- based and should represent certain broad areas of society.
- 3. To enable the California Highway Commission to devote maximum possible effort to its policy responsibilities, it should be authorized to delegate all nonpolicy or quasi-administrative duties to the Director of Public Works and State Highway Engineer.

### With Respect to Powers of the Highway Commission . . .

- 1. Section 103 of the Streets and Highways Code should be amended to change from conclusive to rebuttable the effect of a resolution of the commission stating that the public interest and necessity require the acquisition of a given parcel of property. Such an amendment would provide the opportunity for a decision of the commission to be appealed to the courts. and in such an instance would enable the judicial process to operate in the determination of whether a highway or freeway routing is planned and located in such a manner that will be most compatible with the greatest pubhe good and the least private injury. It would also remove the implied state policy that highways represent the highest and best use of land in California
- 2. Section 103.5 of the Streets and Highways Code should be either (a) repealed, which would exempt all lands dedicated to park purposes from the eminent domain authority of the commission, or (b) amended to make the exercise of such emment domain authority contingent on the approval of park administering authorities, which in the case of the state would be the State Park Commission. The committee feels that this section is an excessive and unreasonable delegation of power by the Legislature and operates to diminish the exercise of responsibilities placed by law upon other state agencies. Ample precedent for amending this statute can be found in Section 1013, which requires approval by the Reclamation Board of any plans by the Department of Public Works for a bridge or other structure across any river or drainage channel or basin under the jurisdiction of the board, and also in Section 100.2, which requires the department to enter into an agreement with local authorities prior to closing any city street or county highway with any freeway.

#### REGIONAL PLANNING IN THE LAKE TAHOE BASIN

Based upon intensive study during the 1963-65 interim period, in its 1965 report to the Legislature the committee outlined the effects of rapid growth upon the world-renowned scenic beauty of the Lake Tahoe Basin. In its discussion of this problem the committee said the following:

"Lake Tahoe, described by Mark Twain as 'surely the fairest picture the whole earth affords, '1 is one of the great natural resources of California—and the entire United States Located at an elevation of 6,200 feet in a structural basin of the snowcapped, forest-covered Sierra Nevada Mountains on the border between California and Nevada, this magnificent body of water is 21 miles long and 12 miles wide, has an area of some 192 square miles, and is one of the highest and deepest fresh water lakes in the world With a maximum depth of 1,645 feet and a mean depth of 990 feet, it contains the staggering total of 122 million acre-feet of water, by comparison, Lake Mead, formed by Hoover Dam, which is one of the largest artificial lakes in the world, contains an average of approximately 14 million acre-feet of water

"In its superb setting, and possessing the unique quality of being one of the clearest lakes in the world (only Lake Baikal in Russia and Crater Lake in Oregon are known to be comparable), it is not surprising that Lake Tahoe has become one of the most popular all-year mountain recreational attractions in the western United States Of course, wherever such an incomparable lake were to be located, it is likely that it would see a steady increase in visitors and permanent residents as a natural consequence of exploding population and improved transportation means and facilities, coupled with the increasing leisure and financial resources of the disposal of the American people.

"However, the Lake Tahoe Basin has been blessed or cursed, depending on one's point of view, with several additional factors which have uniquely contributed to the phenomenal recent and projected increase in its temporary and permanent population, and the accompanying rapidly accelerating rate of private and commercial development Included in these factors are (1) the year-round attraction of legalized gambling in numerous resorts and casinos on the Nevada side of the lake, (2) the high-speed, high-volume transportation arterials leading into and out of the Lake Tahoe Basin, (3) the proximity to and easy access from the increasingly heavily populated San Francisco Bay region and Sacramento Valley, which provide a ready market for permanent home and cabin sites on the lake and a variety of commercial enterprises, and (4) the accelerating development of year-round facilities for such sports as snow skiing, water skiing, boating, golf, fishing and swimming at many points in the basin.

"In view of this increasingly heavy usage and exploitation, the Lake Tahoe Basin is a microcosm of the developing need for integrated resources planning and management which is becoming apparent throughout the State of Califorma With nearly every major resource present to some extent in the basin, which is a welldefined region by most standards, it is clear that most of the problems of future development and the preservation of values in the basin are inescapably regional in their significance And if this development is to proceed in such a manner as to preserve some of the basin's original charm and beauty, and yet strike the proper balance with the private and commercial exploitation necessary to serve the permanent population of some one-half million and an annual visitor count in the millions estimated for the basin in the year 2000, it can be achieved only by the most careful and visionary planning and enforcement of land use, and unyielding protection of the values which are unique to this area

"However, the achievement of a truly workable approach to these development problems is immeasurably complicated by the profusion of governmental jurisdictions (one federal government, two states and five counties), districts, and administrative agencies in the basin, each of which exercises a varying degree of responsibility and authority for specific matters in the basin"

The investigation by the committee was focused on the following five questions.

- "1 What has been the impact of development to date on the Lake Tahoe Basin?
- "2 Who holds the responsibility and authority for regional planning and development in the Lake Tahoe Basin?
- "3 What should be the role of the State of California and its agencies in regional planning and development in the Lake Tahoe Basin?
- "4. What is the status of regional planning in the Lake Tahoe Basin?
- "5. What is the necessity, desirability, and feasibility of establishing a regional multipurpose authority, with broad powers under the law to develop and enforce a regional master plan, which will ensure the optimum development and maximum preservation of the values which are unique to the Lake Tahoe Basin?"

As the result of its review of testimony presented by every public and private body with an interest in the future of the lake and its surrounding basin, the committee reached the following conclusions:

1 Although it varies by location, the general impact of development to date in the Lake Tahoe Basin has been serious, and in some

<sup>1</sup> Roughing It, p 169

areas thoughtless exploitation has damaged the amenities beyond reasonable hope of recovery. In addition, if the growth in basin population continues at its present pace in the absence of a responsible pattern of controls, the basin faces the possibility of general and irreversible overexploitation. The most urgent problems arising from this situation are the need for the development and enforcement of a responsible land use plan, and an effective means of protecting the unique clarity of lake water from pollution and eutrophication.

- Under existing law, the responsibility and authority for planning in the Lake Tahoe Basin is vested in the planning commissions and boards of supervisors or commissioners of the five basin counties. The Lake Tahoe Regional Planning Commission, which is composed of representatives of the county governing bodies and planning commissions, performs an advisory function only, and in this capacity made a substantial contribution to the preparation of the Lake Tahoe 1980 Regional Plan In addition, there are a number of independent governmental agencies which are under no compulsion to make administrative decisions in conformance with the provisions of any land-use plan approved by the county planning commissions and governing bodies
- 3 Pending the development of the characteristics of a possible regional authority, the committee concluded that there should be no modification of the existing statutory responsibilities of California state agencies with respect to the development and implementation of a regional plan for the basin. On the basis of the preliminary information presented to it, however, the committee expresses its concern over the state and local administrative organization and standards governing the control of water pollution of Lake Tahoe, and is hopeful that this matter will eventually be clarified.
- As a result of the foresight and leadership displayed by public bodies and private interests through the Tahoe Regional Planning Commission and the Lake Tahoe Area Councıl, a Lake Tahoe 1980 Regional Master Plan has been prepared to guide the long-range development of the basin This plan, which is presently being reviewed by the individual basin counties, appears to the committee to be a well-conceived approach to achieving the long-range crucial and necessary balance between exploitation and preservation of the varied resources unique to the basin The committee agrees, however, that the ultimate effectiveness of this land-use plan will be measured by the degree to which its essential provisions

- are carried out With respect to this, the committee expresses its concern over the possible compromise of one of the fundamental premises of the Lake Tahoe 1980 Regional Plannamely, the West Shore Parkway—by the apparent insistence of the California Division of Highways and California Highway Commission on imposing a four-lane, controlled-access freeway in place of the parkway along the west shore of Lake Tahoe
- 5. Because the complex pattern of governmental jurisdictions in the basin makes all but impossible the unified, comprehensive approach to basin management which is necessary to prevent overexploitation of the remaining amenities of this great resource, the committee finds a clear need for the creation of some kind of bistate, regional authority to govern basin development This regional authority would have broad powers under the law for the development and enforcement of a regional master plan which will ensure optimum development and maximum preservation of the values which are unique to the Lake Tahoe Basin General support was expressed at the public hearing of the committee for this regional approach to basin management, and a general desire was evident to proceed to the task of defining the most effective means by which this objective can be realized.

In view of the serious and urgent nature of these conclusions, the committee felt that the only hope for achieving responsible, long-range management of the Lake Tahoe Basin lay in the creation of an effective, bistate regional governing body possessing the ability to make the kinds of decisions concerning development and use of the regional natural resources which clearly transcend the interests of the numerous local entities and agencies of government within the basin. In addition, to enable full consideration by the State of California of the advantages of a West Shore Parkway, the committee felt that it was necessary to provide the state with such statutory authority.

The committee therefore recommended that

A Lake Tahoe Regional Authority Study Commission should be established to develop the character, statutory framework, and powers of the regional authority necessary to provide for comprehensive management of development in the Lake Tahoe Basin, and

To provide a clear statutory basis for the construction of parkways by the State of California, the statutory authority for the designation, construction, and maintenance of parkways should be enacted.

The 1965 California Legislature endorsed these recommendations, establishing the California parkway system and, in conjunction with the Nevada State Legislature, creating the Lake Tahoe Joint Study Committee to study and recommend the characteristics and powers of a bistate regional agency governing basinwide development

<sup>&</sup>lt;sup>2</sup> A biochemical process in lake waters by which increasing hiological activity (usually algal growth) resulting from added nutrients, frequently from sewage wastes, produces turbidity, a process which would destroy the unusual character of Lake Tahoe water

The bistate committee has completed its work, and will report its recommendations to the 1967 Legislatures of both California and Nevada This committee looks forward with anticipation to these recommendations, and is hopeful that they will point the way toward establishment of a regional agency without

precedent anywhere in the world Should this effort succeed, and this committee is confident that it will, the resulting preservation of some degree of the beauty of the Lake Tahoe Basin for succeeding generations will be an achievement in which this committee is proud to have played a part

#### THE FILLING OF SAN FRANCISCO BAY

As part of its continuing review of the policies governing resources planning, and management in California, the committee maintains its interest in the problems associated with growth in the San Francisco Bay area, especially as they affect the tide and submerged lands of San Francisco Bay itself. During the 1963–65 interim, the committee studied this matter in some detail, and in its 1965 report to the Legislature said the following.

"The impact of California's growing population on the environment is becoming increasingly apparent in many ways, and is posing increasingly complex and difficult problems of responsible resources planning and management One of the most dramatic illustrations of those complex problems can be found in the accelerating plans for reclamation of tide and submerged lands in the San Francisco, San Pablo, and Suisun Bays These plans, which are direct result of the rapidly expanding population in the San Francisco Bay area and the demand for additional real estate for residential, commercial, and industrial use, bring into unusually sharp focus the urgent need for responsible, visionary, longrange regional planning which integrates all of the needs of the region, and strikes the proper balance between private and commercial exploitation of the bay and the recreational and aesthetic requirements of the public

"Although it is generally agreed that San Francisco Bay is a unique and valuable resource—one of the greatest of its kind in the world—and possesses many values other than use as real estate, the steady process of filling the marsh, tidal, and submerged lands susceptible of reclamation has in the last one hundred years shrunk the bay from some 568 square miles to less than 325 square miles And there are ambitious, unlateral plans on the part of the many grantees, lessees, and owners to fill much of these remaining lands. If this process continues in the absence of a responsible plan, in another generation the bay as a major element of the San Francisco Bay region will cease to exist

"This situation has developed as a result of the failure of public policy in California to recognize the importance of San Francisco Bay as a major resource in its own right and to enact a responsible, uniform, comprehensive policy to govern the disposition of state-owned tide and submerged land As a result, much of the tide and submerged land in the San Francisco Bay has been granted, leased, or actually sold to a profusion of governmental entities and private organizations, with development governed by a wide array of terms and conditions. In view of this, it is not surprising that the greater proportion of planning for the future filling and/or development of the bay has been proceeding on a local, piecemeal, often provincial basis, unrelated to the needs of adjoining areas or the bay area as a whole

"However, public awareness and concern with respect to this situation has been rapidly increasing, and a number of public and private organizations have taken an active role in attempting to find a solution to this complex problem Because of the many governmental agencies at the local, state, and federal level and the numerous private organizations and individuals who are concerned with the uses which are made of San Francisco Bay, the present period is one of confusion while the essential dimensions of the problem are being defined.

"The two major activities which are currently underway are a study by the San Francisco Bay Conservation Study Commission which was created by the 1964 session of the Legislature, and the preparation of a regional shoreline plan by the Association of Bay Area Governments, which is an informal organization of the nine counties and 80-odd cities in the San Francisco Bay region.

"The Conservation Study Commission, which will report to the 1965 session of the Legislature, has been charged with the basic responsibilities of defining the public interest in San Francisco Bay, determining the broad effects of further

filling, and recommending legislation which protects the public interest. In furtherance of these objectives, the commission has been holding

weekly meetings since August 1964

"The Association of Bay Area Governments, which opposes state action until it has been demonstrated that local action is ineffective, has begun the preparation of a regional master shoreline plan for the entire San Francisco Bay region, and is building a professional planning staff for this purpose It is anticipated that completion of this plan will take two to three years.

"Because of the general concern on the part of numerous individuals and organizations, especially with respect to continuing reclamation in the interim period while the master plan is being developed, a number of bills were introduced in the 1963 and 1964 sessions of the Legislature, most of which would have restricted filling activities until a long-range solution to the problem has been developed Opposition from private interests and the Association of Bay Area Governments, which was based on the premise that local action should be given the first opportunity to solve the problem, prevented passage of the legislation at both sessions of the Legislature

"As a result of the opposition to initial legislation in the 1963 General Session, this committee was directed to make a preliminary review of the problem prior to the 1964 Budget Session The consequence of the initial hearing on this subject, which was held in San Francisco on October 22–23, 1963, was the introduction of additional legislation in the 1964 session, which resulted in creation of the Conservation Study Commission referred to previously The committee had a second hearing in San Jose on July 9–10, 1964, in which special attention was given to

planning for the south shoreline of San Francisco Bay.

"In addition to the difficult tasks of defining the public interest in San Francisco Bay and determining the effects of further filling, the following fundamental questions must be resolved by the many investigations currently underway:

"1 How can reasonable and meaningful restrictions be placed on all further filling projects pending completion and adoption of a responsible regional shoreline plan?

"2 Will a meaningful master shoreline plan be developed and adopted which recognizes all the values of San Francisco Bay and displays a responsible balance between exploitation and preservation?

73 Will an effective means be developed for enforcement of the provisions of the mas-

ter shoreline plan?"

Based upon the recommendations of the study commission, the 1965 Legislature created the San Francisco Bay Conservation and Development Commission, with a broadly based membership reflecting the many entities and agencies with an interest in the bay This commission was charged with the responsibility of formulating for consideration by the 1969 Legislature a regional shoreline plan governing the long-range development of the bay and balancing its uses, and recommending a meaningful mechanism for enforcing its provisions. During this period the commission was given the authority to approve or deny permits for filling the bay.

The committee is hopeful that a responsible plan and means of enforcement will be developed which will ensure the continued, balanced existence and utilization of the many values inherent in San Figure Bay, and will follow closely the progress toward ''

goal.



Conflict in the Redwoods

Assembly Committee Reports-Part 1

1965-67



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# Assembly Committee on Natural Resources, Planning, and Public Works

EDWIN L Z'BERG

January 2, 1967

Honorable Jesse M Unruh Speaker of the Assembly, and

Honorable Members of the Assembly State Capitol Sacramento, California

#### Gentlemen

The Assembly Committee on Natural Resources, Planning, and Public Works submits herewith its report to the Legislature on the 1965-67 interim studies dealing with management of redwood resources, including the proposed Redwoods National Park

This complex matter has been the subject of intense debate and increasingly bitter conflict for many years, and for a number of reasons—including growing concern over the prospects for long term survival of a representative example of old growth coast redwoods in a relatively undisturbed natural setting, the conflicting interpretation of the commercial and recreational values and future of both old and young growth redwoods, the impact on the local economy of additional public acquisitions of old and young growth trees, and the various proposals for a Redwoods National Park—the controversy is now educing national and international interest and concern

Pursuant to its responsibilities for the development of sound public policies governing comprehensive resources planning and management, the committee reviewed the problem in its broadest context, and developed perhaps the most complete, in-depth record to date of its many dimensions. And while the attached report analyzes many of the complexities which are essential to an understanding of the controversy and sets forth the views of the committee concerning the proposed national park, the basic and at present seemingly irreconcilable conflicts in data—and interpretations of data—relating to various crucial aspects of redwoods management have precluded any meaningful judgments on the overall problem

Therefore, as outlined more fully in the report, because of the extraordinary complexity of the problem, the conflicting and incomplete nature of much of the existing data, the great public interest in its resolution throughout California and the nation, and its vital importance to the economic potential of northwestern California, your committee has reached the conclusion that there is a real, urgent need for a comprehensive, scholarly assessment of the short and long range economic future of the entire north coast region. This assessment, which should be conducted by a broadly based study commission with balanced representation from all interested groups, should, among its objectives, develop data relative to the ecological, recreational, and commercial future of the redwoods which is generally acceptable to all affected interests, and which can form the basis of a master plan for the optimum, balanced, long-range economic development of the entire region, and include the most effective contribution which can be made by the numerous proposals for recreational and resources development which have been advanced in recent years within the region

Because of the increasingly serious conflicts in resources allocation which are posed by California's explosive growth, it is becoming ever clearer that only by a more balanced approach toward resources planning and management will it be possible to achieve the wisest utilization of our remaining natural resources in the total public interest. The conflict in the redwoods is but another illustration of the seriousness of this problem, and as was proposed by your committee in its 1965 report recommending creation of the California-Nevada Lake Tahoe Joint Study Committee to develop a regional bistate approach toward basin resources planning and management—a program which was implemented by the 1965 Legislatures of both states and now appears on the way toward a successful conclusion—a comprehensive, regional approach towards resources planning and management is not only increasingly necessary, but is also achievable

The committee expresses its appreciation to the many organizations, public officials, and private citizens who contributed so generously and responsibly to this study. This is a problem of vital importance to the future growth and development of California, and it is hoped that our review will contribute to its orderly and continuing solution.

Respectfully submitted,

Edwin L Z'berg, Chairman Charles Warren, Vice Chairman

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### INTRODUCTION

Because much of the recent controversy over management of the redwoods has centered on recreational values and uses—especially as related to the proposed Redwoods National Park—the committee originally envisioned including this subject as one element of its broad, in-depth 1965–67 interim review of recreation planning and management in California. However, as detailed planning of the interim program proceeded, it became clear that the economic and recreational implications of this problem to the state—especially to

northwestern California—coupled with the great and growing public interest in its solution, indicated that it should be more appropriately scheduled as a separate matter for study by the committee.

In view of the countless words which have been and continue to be written, and the numerous conflicting judgments which have been made on this subject, the degree of public confusion and dispute over what the facts really are and what the proper course should be in management of the redwoods is not surprising. Therefore, in the attempt to place all available information on the record, the committee requested every major interest to present its analysis of each of the major park and recreation proposals in the light of its own concerns and responsibilities, and in addition, wherever appropriate and feasible, to respond to the larger dimensions of the overall problem, as follows.

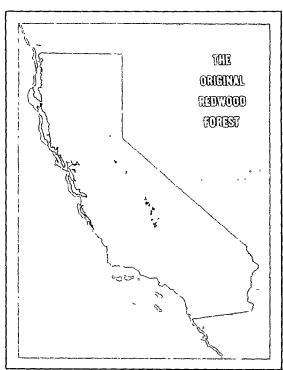
- 1 The minimum acres, based on the existing and potential geographic distribution of preserved stands of sufficient size, quality, and integrity to most likely insure long term survival of the old and young growth redwoods necessary to meet projected long range recreational demands; such estimates should include the development standards and criteria used, including, for example, the relative intensity of camping, picnicking, and other development in old and young growth areas,
- The minimum acres, from the point of view of both the regional economy and individual timber companies, of old and young growth redwoods required to maintain a specified level of activity with respect to sustained yield of both saw timber and pulp production,
- 3. The degree to which each major proposal for the management of redwood resources (State Master Plan, the national park proposal of the federal government, the national park proposal of the Sierra Club, and the industry-sponsored proposal of the Redwood Park and Recreation Committee)¹ achieves the minimum estimates projected for recreation and commercial timber production outlined above, and the relative acquisition and development costs of each, and
- 4 Definition of the extent and nature of state and federal responsibility in meeting the short and long term economic consequences of the adoption of a program for the long range management of redwood resources.

The response to this approach has been excellent, and in addition to receiving a broad spectrum of views from some 40 witnesses in public hearing, the committee toured much of the Redwood Country by air and bus under the sponsorship of both recreation and commer-

cially oriented groups, and has examined all available pertinent materials. Based upon this comprehensive record, which in the judgment of many of those familiar with this subject is the best and most detailed yet to be developed, the committee has reached the conclusions outlined in this report

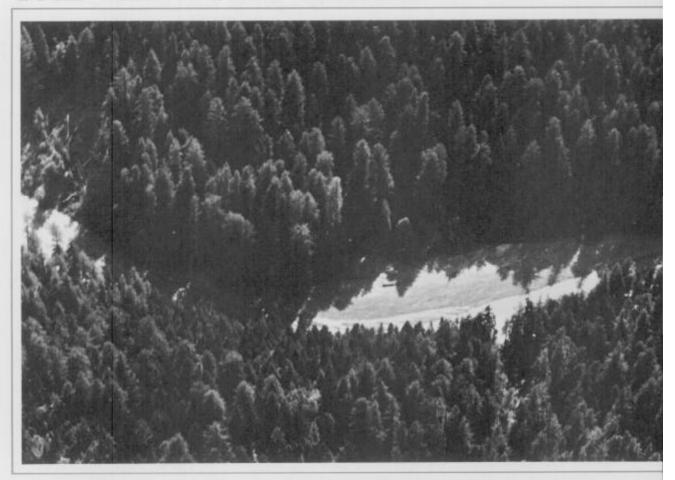
Although it is clear that the conflict will subside only with the development of data and a program for management of the redwoods which is mutually acceptable to all the contending interests, and provides optimum recognition of both commercial and recreational values-a difficult task at best-the committee is confident that a program can be formulated which will achieve the greater portion of the conflicting objectives. As with any compromise it will not completely satisfy any interest, but with a recognition by all parties of the uniqueness of this situation and the need to develop a spirit of cooperation instead of antagonism and inflexibility, it would appear that a solution can be achieved which will well serve the greater public interest.

It is with this hope and objective in mind that this report is written.



Other proposals have previously or subsequently been advanced and presented to the committee, each of which is essentially a recombination of various elements of the above four basic proposals

### THE REDWOOD FOREST



#### History, Geography, and Ecology

The genus Sequoia is today composed of two species, the Sequoia gigantea-or "big trees"-found in scattered remnant forests in the Sierra Nevada Mountains, and the Sequoia sempervirens-or coast redwoods, or just "redwoods"-found originally by man in a narrow band of forest generally not over 25 miles wide in the fog belt along the California coast from the San Luis Obispo county line north for 500 miles to just across the southern Oregon border. There is fossil evidence that much earlier in geologic time-some 130 million years ago during the Age of Dinosaurs-a much different world climate nurtured sequoia forests of many species over vast areas of North America and other continents as well. Today there are relatively few isolated groves of Sequoia gigantea remaining and they are consequently nearly all protected in state and national parks and forests in the central and southern Sierra Nevada. Possessing no commercial timber value, the "big trees" are now solely a recreational resource, and are not involved in the controversy swirling about the Sequoia sempervirens.

The Sequoia sempervirens, or coast redwood, is the other-and vastly more prolificsurvivor of the ancient worldwide Redwood Empire, and at the arrival of man in 2000 B.C. occupied some 1,500,000 to 2,000,000 acresdepending on definition-of the central and northern California coast. Whereas the superlative "big trees" are older (maximum known lifespan of 4,000 years), larger (average of 25-30 feet in base diameter and a known maximum of 40 feet), and comparatively squat (average of 250 feet in height and a known maximum of 320 feet), by contrast the superlative "redwoods" are of lesser age (average of 800 years,. and a maximum known age of 2,200 years), are more slender (average of 12-16 feet in base diameter and a known maximum of less than 23 feet), and are taller (average of 300 feet in height and a known maximum of 370 feet).

Although the relationship is not clearly understood, geographically there is a close



parallel between fog and the redwood forest, and the two are found in close association along the California coast. Other climatic conditions favorable to the redwoods include moderate temperatures, heavy winter rains, and dry summers with considerable fog. Spreading north from the drier, less foggy southern end of their range in the Santa Lucia Mountains, the redwoods evolve from thin, scattered, uncharacteristically shaped stands in narrow, deep canyons to the dense, tall, well-formed forests of Humboldt and Del Norte Counties, where the rainfall reaches 100 inches a year and the fog is thick and frequent.

In addition to climate, the ecology—and consequent geographic distribution and regeneration potential—of the redwoods is uniquely affected by the characteristics of the watershed as influenced by such complex factors as geology and soil properties, the hydrologic cycle (behavior of precipitation, storm movement and texture, flood flows, erosion and alluvial deposition, etc.), and associated plant

families. And, although potentially capable of reproduction from seed, by far the more common method of regeneration is through the unusual and highly developed ability to sprout seedlings.

A great variety of unique natural features and related fish and wildlife habitat-as well as plant families-can be found throughout the range of the redwood forest. The natural features range from the changing character of the rocky and sand beach and lagoon-marked coastline inland to the bluffs and headlands, and beyond to the rugged land of high ridges (rarely over 3,000 feet above sea level) and deep vallevs cut by clear, swift-flowing creeks and rivers. The mix of the forest itself changes from south to north-as the climate gets wetter the understory becomes lusher-and from the coast inland to the highest ridge meeting the fog: near the sea the redwood is joined by spruce, cypress, and hemlock, and on the slopes and divides by the Doug fir, tanoak, and madrone. On the alluvial flats and benches are found the nearly pure stands of superlative, tall redwoods. The streams and rivers of "Redwood Country" and their associated fish and wildlife are attractive and unique features, with the cutthroat and rainbow trout, steelhead, and salmon of special fame and interest to the recreationist.

The original and remaining geographic range and acreage of the redwoods is a matter of definition, and consequently subject to considerable debate, depending on the point to be made. Many of those who advocate that more acreage of virgin-or "old growth"-redwoods be set aside under public protection understandably attempt to demonstrate the largest possible original acreage and the smallest possible remaining acreage, as well as the most rapid possible depletion of trees subject to cutting by lumber companies. Those who oppose any further public acquisitions naturally attempt to prove that precisely the opposite is the case. In view of the welter of conflicting statistic and "facts"-or differing interpretations of the same facts-it is probably not possible to determine the absolute truth with any degree of precision. However, following are several pointsvariously accepted by the contending interests -which are important to an understanding of the total problem of redwoods management, and the various alternatives which have been suggested.

#### Definition

When forest lands are typed for species, it is customary to use a definition of 50 percent or more stocking for the species concerned (i.e., 50 percent or more of the ground is covered with commercial timber of a given species). However, because of the unique character of the coast redwood, different definitions have been used for different surveys. For example, a number of definitions have been used to estimate 2 these acreages in California, among which are the following:

 "California definition": 5 percent of the ground covered with commercial timber, 20 percent of which is redwood (which equals 1 percent of ground, or 6.4 acres of redwoods per square mile). Under this definition at least three estimates of total acreage of redwoods have been made by the U.S. Forest Service:

1925: 1,454,000 acres a

1945: 1,879,000 acres 4

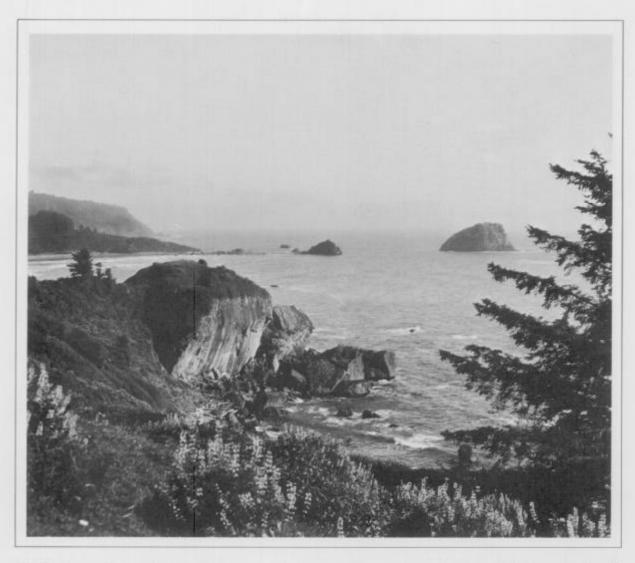
1954: 1,970,000 acres 5

2. "Forest survey formula": 20 percent or more of cubic volume of saw timber and pole stand is redwood, excluding those areas which are 10 percent or less covered with timber (which equals 2 percent of land). Under this definition the U.S. Forest Service estimated in 1964 a total of 1,586,000 acres of redwood-type land, which also indicates that there is nearly 400,000 acres of land which have between 1 percent and 2 percent of the area covered with redwood trees of varying quality and age."

These varying estimates of total original acreage of redwood-type forest—or lands—are listed to illustrate the care which must be exercised in interpreting statements regarding the extent of the "original" primeval redwood forest. What is really important, of course, to an adequate understanding of the commercial and recreational values involved, is not the original or remaining extent of acreage, but the quality, volume, location, watershed integrity, and development capabilities of the various portions of redwood forest in question. These factors will be considered subsequently in various sections of the report.



- All estimates are of commercial lands, and exclude some 100,000 acres of state-owned lands where the coast redwood is considered to be the primary feature, or the major values are related to the occurrence of the coast redwood.
- Ecalifornia Legislature, Assembly Committee on Natural Resources, Planning, and Public Works, transcript, July 15, 1966; testimony of California Redwood Association; Show, S.B. 1932, U.S.D.A. Tech. Bul. No. 283.
- \*Loc. cit., California Forest and Range Experiment Station, 1946. Forest Survey Release No. 4.
- <sup>5</sup> Loc cit., California Forest and Range Experiment Station, 1954. Forest Survey Release No. 25.
- <sup>8</sup> Loc, cit., U.S. Department of Agriculture, 1965, Forest Resource Report No. 17.
- Loc. cit., Testimony of California Redwood Association.

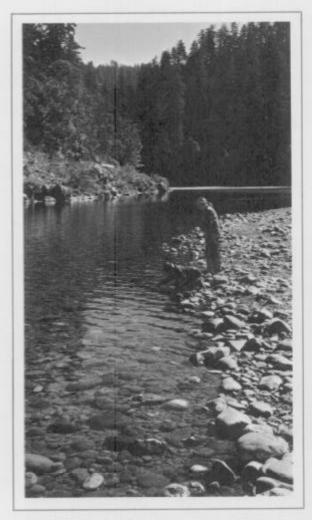


#### "Old Growth" and "Young Growth" Redwoods

The major aesthetic and recreational-as well as commercial-attributes of the coast redwoods are their great size and age. As Donald Culross Peattie writes in A Natural History of Western Trees, they are " . . . not just occasionally taller, in individual specimens growing under unprecedently favorable conditions. but taller as a whole, as a race-a titan race . . . " This conflict between the preservation and cutting of the old growth trees-especially the superlative stands-has been at the heart of the debate over the proper uses to be made of the redwoods from the very beginning. Therefore, as with all the statistics, careful interpretation must be made of those referring to the kinds of redwoods or redwood-type land in public and private ownership. Accordingly, of the

1,500,000 to 2,000,000 original acres of redwood-type land-the total of which depends on the definition used-all but some 250,000 to 300,000 acres of old growth trees of varying quality and mix with other species is in various stages of regrowth, and of the 100,000 acres of redwoods reported under state ownership, only some 50,000 acres are classified as old growth, also of varying quality and species mix.8 While valuable from the standpoint of watershed protection and ecological integrity, as well as the placement of user facilities, young growth trees are of secondary importance for the major recreational values associated with the primeval trees, whereas they are of considerable importance for commercial purposes if allowed to reach sufficient size.

North Coast Redwood Master Plan, 1965; California Legislature, Assembly Committee on Natural Resources, Planning, and Public Works, transcript, July 15, 1966.



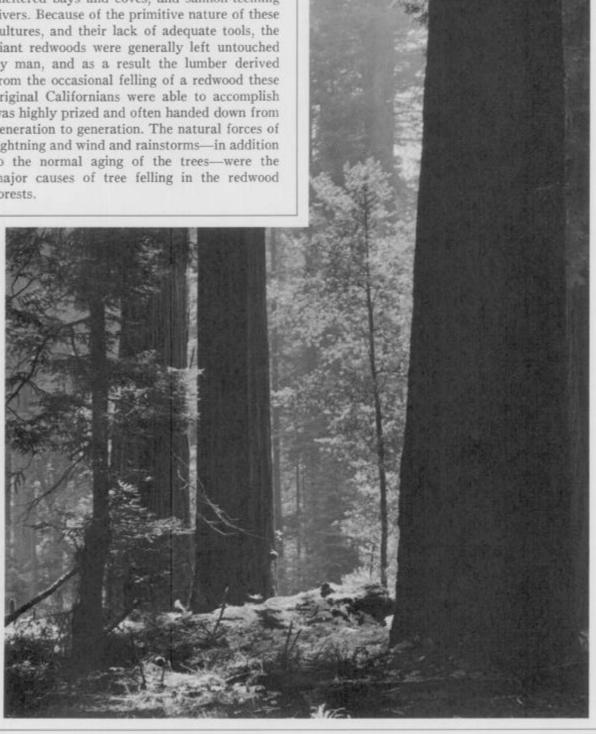
"Park" and "Commercial" Trees; Ecological and Watershed Integrity

A third major consideration essential to an understanding of redwoods management is the variation in forest composition and quality, and the need for maintenance of watershed and ecological integrity. The so-called "superlative," "park quality or stand," "flat or bench" old growth redwoods growing in dense, tall stands approaching 100 percent redwood trees are what most people think of as representative of the "redwoods," and generally what they are initially most interested in seeing. However, while such stands are the most dramatic element, they are only a part of "Redwood Country," which consists of such diverse geological and ecological features as wild sand, rock, and lagoon-marked beaches; bluffs and headlands; rugged coastal mountains; swift streams and rivers; mixed redwood and whitewood forests; and a varied fish and wildlife population. Because the ridgetops have shallow soils, less dependable moisture, and limited wind protection they are frequently bald or grassy. The sidehills-which comprise some 95 percent of "Redwood Country"-are in mixed upland forests of redwood, Douglas fir, spruce and hemlock, tanoak, and madrone of varying percentages-averaging roughly two-thirds redwood and one-third whitewood. This area comprises the bulk of the commercial timberland. The remaining 5 percent is in alluvial flats and benches, which with their rich, deep soils, assured moisture supply, and protection from winds are ideal for development of the superlative, dense, tall stands of nearly pure redwood. These stands have been the focus of efforts to set aside as parks, and some choice areas have been acquired at Jedediah Smith, Del Norte Coast, Prairie Creek, and Humboldt Redwoods State Parks.

However, two reasons are suggested for not limiting public acquisitions to the superlative stands only. First, the visitor frequently extends his interest beyond viewing the superlative trees to a desire to visit and understand the Redwood Country as a whole, in its natural setting, and insofar as it is possible it seems appropriate that he be afforded this opportunity. Second, as has been learned the hard way, there is a need to manage carefully the ecological integrity of the entire watershed surrounding preserved superlative bottom stands. Because of the highly unstable soils in many parts of Redwood Country, improper forest practices and other activities in one part of the watershed can produce adverse-and sometimes devastating-effects elsewhere in the watershed. It seems likely, for example, that poor logging practices in the upper reaches of the Bull Creek watershed contributed to the severe damages sustained by the Humboldt Redwoods State Park during the 1955 and subsequent floods, and as a result, much of the upstream area has now been acquired for long term watershed management purposes. In addition, evidence seems to indicate that the survival prospects are reduced when units of old growth redwoods are not large enough to resist the effects of roadbuilding, wind tunneling, overuse resulting in the compaction of soils around the root systems, etc.

#### Commercial Values and Utilization

Although there is evidence that the Redwood Country had inhabitants as early as 2000 B.C., the dense, dark redwood forests were usually avoided as a place for permanent homes, and villages were located instead on the elk prairies, bald hills, open grassy coasts. sheltered bays and coves, and salmon-teeming rivers. Because of the primitive nature of these cultures, and their lack of adequate tools, the giant redwoods were generally left untouched by man, and as a result the lumber derived from the occasional felling of a redwood these original Californians were able to accomplish was highly prized and often handed down from generation to generation. The natural forces of lightning and wind and rainstorms—in addition to the normal aging of the trees-were the major causes of tree felling in the redwood forests.

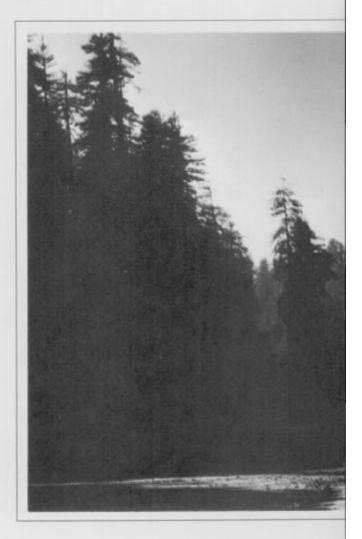


Subsequent settlers in Redwood Country, such as the Spaniards and Russians, were aware of the extraordinary value of the redwood as lumber, but lack of extensive demand and inadequate equipment limited its use in any substantial quantities. In this regard, however, it is interesting to note that Fort Ross—a tourist attraction today—was built of redwood in 1812 by the Russians, and Father Junipero Serra—founder of the California missions—was buried in a redwood coffin in 1784 at Carmel, and when rediscovered 98 years later, the coffin was found to be in perfect condition.

The 1848 Gold Rush marked the beginning of what few people who are familiar with the period would argue was one of the darker episodes of resources exploitation in the history of our country. Because of its durability, resistance to rot and insects, nonwarping qualities, paint retentiveness, and easy workability -plus easy abundance and consequent low price-the boom sparked by the Gold Rush produced a huge demand for redwood lumber for use in everything from houses and wharf pilings to boxes and sluiceways. In addition, as a result of the philosophy of federal policy encouraging land settlement as rapidly as possible, under the Pre-emption Law of 1841 and the Homestead Act of 1862 settlers could buy 160 acres of old growth redwood for \$1.25 an acre-which was no more than the price of prairie or alkali flat. These early settlers viewed the redwoods much as they would weeds or pine trees, and cleared the land as rapidly as possible, using every method they could to prevent the trees from regenerating by their unique sprouting ability. As a result, many thousands of acres were permanently cleared of old growth redwoods, and converted to other uses.

These easy homestead laws were quickly used by timber speculators and operators to acquire—often fraudulently—large acreages of publicly owned old growth redwoods, upon which large profits were realized. The huge demand and easy access to ownership of the old growth trees—coupled with a lack of control of logging practices—spawned a thriving redwood lumber industry from Monterey to the Oregon border and resulted in abuses of the land which are evident even to this day. One technique for getting the huge logs to the

mill, for example, was to build temporary dams on the fragile forest streams and float the logs downstream on the flash flood which resulted from "tripping" or breaking the dam. This technique was used as late as 1936 in Mendocino County, where some of the streams still show the effects of the resulting scouring. Among the other devastating logging techniques used were the donkey steam engine for skidding logs through the forest, which crushed and ploughed everything in its path, and the burning of areas and slash surrounding felled trees prior to moving to the mill for processing. As the cutting of large acreages proceeded, and new techniques and equipment were developed. some of the more destructive practices were discontinued. The demand for redwood continued with few exceptions, however, and saw huge acceleration during and after World War II, a demand which continues at a reduced level to the present day.



Although most contending interests would probably agree upon the actual course of events in the history of redwood logging, the interpretation of the effects of these events is a subject of continuing, often bitter—and in many cases apparently irreconcilable—controversy. Albeit there are numerous areas of complex disagreement—the interpretation of which appears subject to the use of statistics or empirical observations which in many instances lack adequate scientific substantiation—the most important issues appear to revolve about the short and long term effects of various logging practices and the prospects for sustained productivity of redwood products.

With respect to the effects of logging techniques, based upon the hearings and field trips of the full committee and the Subcommittee on Forest Practices and Watershed Management chaired by Assemblyman Charles Warren, the best preliminary conclusion appears to be that in certain instances the short term effects of

poor logging practices are devastating and indefensible, especially as they relate to soil erosion and fish and wildlife habitat. However, the long term consequences seem to be less certain, for based on empirical observations by the committee it seems possible for a severely damaged watershed to demonstrate a remarkable recovery power and display a stand of healthy, young growth trees with a mix very similar to the original forest, accompanied by satisfactory stream conditions and site quality. The most obvious conclusion seems to be, therefore, that much more reliable information is necessary, and that it should be acquired in an orderly, scholarly manner by a team of scientists representing a broad spectrum of relevant disciplines. and conducted on a scientifically controlled basis, applied, for example, to paired watersheds (i.e., comparison of natural processes in relatively undisturbed watersheds with those in watersheds subject to a variety of effects caused by the activities of man).



Concerning the second point of dispute, that of sustained productivity prospects, there appears to be only one fact everyone agrees to There is a continually diminishing supply of old growth redwoods Because of the differing estimates of the rate of regeneration of young growth redwoods and their probable short and long run utilization in conjunction with the

remaining old growth trees, it is simply impossible to know with certainty what the commercial future of the redwood timber industry is. The following conflicting statements received by the committee in the course of its exhaustive examination of this problem illustrate the difficulty of reaching any definitive conclusions regarding this aspect of redwoods management.

John Gleason Miles, consulting forester ("The Effect of Commercial Operations on the Future of the Coast Redwood Forest," 1963, a report prepared for the U.S National Park Service)

"The volume of old growth redwood timber on commercial lands, both public and private, will decline to about 2,500 MMbm <sup>9</sup> by the year 2000, and under the selection system (under which about one-third of the present major owners plan to operate) will continue at that level indefinitely

The total volume of growing stock (old growth plus second growth) is now 30,981 MMbm. This will decline slightly, to a low of 27,771 MMbm in 1983. At that time the ratio of growth to cut will be 1 1 and subsequently will rise somewhat. The total volume of growing stock in the year 2013 will be 30,241 MMbm, and in the year 2023, will be 31 137 MMbm.

## Deane R. Mather, private forest land manager, and Dr. Rudolf W. Becking, forest research consultant

Arthur D Little, Inc, a national research firm, recently completed an economic analysis of Mendocino County Their findings indicated that at Mendocino's present rate of cut, their old growth will be essentially exhausted by 1970 findings indicate that at the present rate of cut Humboldt County will virtually be out of old growth in 1968 Arthur D Little, Inc., just a few months ago, completed an analysis of Del Norte County's economy At Del Norte's present rate of cut, a three-year lifespan for old growth was indicated . thus, research from all three counties reveals that the area has but a few short years left before its economy undergoes a drastic transformation and reduction the US Department of Agriculture's Pacific Southwest Forest and Range Experiment Station, for the first time is conducting a detailed timber inventory survey of these three counties Arthur D Little, Inc, has based its timber supply projections for Del Norte upon the preliminary findings of this survey After old growth supplies are exhausted, the area's economy will be primarily based on wood byprod-. A small flow of saw logs will continue to be produced from managed independent holdDr. H. DeWayne Kreager, consulting industrial economist, Seattle, Washington ("Economic Factors Relating to Redwood Park Proposals: an evaluation of the impact of proposed additions to California redwood parks on the economy of Humboldt and Del Norte Counties," January 1966)

erated from this area will be severely felt

The redwood industry is a permanent industry Present cutting rates are probably still substantially above new growth rates, but there are reputable professional forestry experts who conclude that the rate of cut and the rate of growth are rapidly approaching balance Data collected from the five major timber producing and processing companies in the area indicate that these companies, source of 75 percent of the commercial logs being provided from private sources, will move into permanent cutting cycles in 20 to 40 years Some will start earlier, but the realization of a sustained yield operation in the redwood industry can be a completely accomplished fact by the year 2000 or shortly thereafter Realization of the status of a full-utilization sustained-yield forest economy requires that the greatest possible maximum of present commercial timberlands be kept in commercial use and managed through the first cycle of cutting old growth, to a combined old growth-new growth at about 20 years, to an almost complete new growth within 40 years Attainment of this objective is the key to the future economic security of the redwood region

#### J. Michael McCloskey, conservation director, Sierra Club, and Gordon P. Robinson, consulting forester, formerly forester, Southern Pacific Company

"The second question (concerning the minimum acres, from the point of view of both the regional economy and individual companies, of old and young growth redwoods required to maintain a specified level of activity with respect to

ings, and a few of the large industrial owners have sufficient young growth to sustain saw log production, but only at a severely reduced level from former old growth cutting rates

The effects on California's economy resulting from the future loss of the large volumes of wood products gen-

Million board feet

both saw timber and pulp production) essentially is addressed to the lumber companies, not to recreation groups. The answer can only be framed in a series of equations between acreage and output These equations, however, will not reveal two fundamental perspectives that must be borne in mind in considering the impact of parks on the lumber industry's future in the north coast counties One The industry's supply of old growth will be exhausted in a very few years. At that time, a distinct falloff in production and employment will occur Two If and when enough second growth exists to support the industry, the industry will inevitably operate at a much lower level of production and employment In short, current levels of output and production will soon be at an end The only significant question is when this will occur, and whether other resources, such as enough parks, will remain to support a diversified economy

Research shows that following depletion of the privately held old growth timber in Humboldt County, about 1980, production will be reduced to a mere 45 percent of its present level Furthermore, much of the timber that can then be cut will be too small for anything but pulp Employment in the forest industries will probably be reduced by an amount considerably more than proportionate to those figures because of automation

### Robert N. Colwell, chairman, Northern California Section, Society of American Foresters

Based on information that has been available to us and the exercise of our best professional judgment, we believe that Humboldt County faces a transition during the next 25 years from a forest industry dependent largely on old growth to one relying largely on young growth. We find that the annual cutting level there has been fairly stable in recent years at something less than 1.5 billion board feet, that the old growth timber will not be exhausted for many years, and that the production from young growth permanently sustainable in the future is at least 65 percent of the recent relatively high level of cut Under these circumstances an orderly transition from an old growth to a young growth resource base can be accomplished without a violent economic and social readjustment provided enlightened management, prudent capital investment, rational tax policies, and wise plans for industrial development are applied. We believe that under proper management, the timber resources and timber growth potential of Humboldt County can perpetuate a healthy and substantial timber economy

Francis H. Raymond, California State Forester, Chief, State Division of Forestry, executive secretary, State Board of Forestry

"Estimating a 'sustained yield' of sawtimber and pulp for a large region with diverse ownerships such as the redwood region is practically an impossible task with present prediction tools Estimating sustained yield for a single property with carefully delineated management objectives is difficult enough In a regional economy, with vast areas of variable site quality and different growth rates, many owners with variable objectives and cutting practices and rapid turnover in ownership, a rapidly shifting wood market situation with new relations between plywood, lumber, and pulp, uncertainty as to taxes, long-range protection problems, rapid changes in land use due to recreation and water development plans, et cetera, the situation is wellnigh impossible Regional sustained yield could be estimated, but no two people would agree as to the basic assumptions that would be required for the estimate These assumptions would include such items as (a) area by site quality of timber included within the region, (b) present stocking and volume of timber and the rate at which old growth would be liquidated and young, fast-growing stands established, (c) the products-mix harvested by various owners now and in the future, depending on market demand for wood because of its influence on rotation or cutting age, (d) growth rates and yield from mixed stands under various silvicultural treatments, (e) estimates of the effect of technological development, new scientific data, more intensive management on the growth and yield of the forest and resulting cutting decisions by owners, and (f) other similarly difficult estimates There are not any statewide surveys designed to produce data on the amount of cutover or logged area The area cut is roughly proportionate to timber production which is measured annually However, no exact relation can be assumed because of variability in the volume of timber produced per acre

Dr. Richard A. Siegel, Chief, Economic Planning Section, State Office of Planning ("The North Coast Forest Products Industry in 1975," a study prepared by Dr. Siegel when he was research economist of the Bank of America N.T & S A, June 14, 1965)

The north coast forest products industry in 1975, then, will be characterized by fewer, but larger, companies and its output will be more diversified than at present. There will be fewer employees in the industry, but their wages should be high and their work steady. It is projected that employment in the forest products industry will approximate 13,250 people 10. The industry will offer a good employment foundation, but it will not be a stimulator of growth. The people of the north coast will have to look to other sources for expansion if that is what they desire.

<sup>10 &</sup>quot;This employment figure represents a 23-percent decrease from the 17,116 forest products employees in 1960. Timber production in 1975 was estimated to be 25 percent lower than the 1958-1962 average. Since the 1960 timber cut of 2,272 million board feet was considerably less than the 1958-62 average of 2,621 million, the percentage reduction in employment appears less than for timber cut when, due to productivity improvements, it will probably be approximately 10 percent greater."

### Philip T. Farnsworth, executive vice president, California Redwood Association

For more than a hundred years, the production of redwood lumber has been the backbone of the north coast economy. The earliest reliable record shows that in 1899 a total of 360 million board feet was produced The production figure hovered in the 400 to 500 million range until the 1920's when a fluctuating output reflected the economic uncertainties of the times During the World War II years, the redwood industry struggled to meet the demands put upon it by Uncle Sam Amidst shortages of labor, machinery, and transportation, the output averaged just over 450 million feet. In the 1950's, production reached a billion feet a year A few production highs were set in the early 1960's, but in recent years the average has settled down to about 900 million board feet Charges have been made on the floor of Congress that cutting has been accelerated on the private lands encompassed in one or another of the national park proposals. This is just not true, as the 1965 production figures will attest Production of redwood lumber last year was down 10 percent from the 1964 level Today's tree-farming practices assure a permanent supply of raw material On a sustained-yield basis, the redwood industry can—if allowed—provide the products Americans demand at about the present level for centuries to come

U.S. National Park Service ("An Appraisal of the Economic Potential of the North Coast Redwoods Counties of California 1960–1980," a report completed in September 1964 by John Kenneth Decker, consulting economist, and also utilized in the 1965 State North Coast Redwood Master Plan)

When Douglas fir areas to the east are considered, the demand pressures for cutting will continue for awhile, however, from the combined sources no great expansion of production or employment is probable. By 1980 a one-third increase may be possible, and this could raise employment from 17,000 in 1960 to 21 000 in 1980. A reduction in the timber acreage and volume is forecast, and this will involve a reduction in assessed values since timber stands cut to 70 percent or more are not taxed except for the land itself. It is possible that this decline will be offset by the values of new plant investment However, in Humboldt County, where mills have concentrated, their assessed value is in a 1 1 ratio to the assessed value of standing timber During 1961-62 these assessed values were about \$25 million for standing timber, \$4 million for timberland, and \$25 million for plant and equipment If the overall projected production and timber volume are applied to Humboldt County, a decrease of approximately 15 percent is involved except in land, to \$21 million assessed value for standing timber and the same value for plants and equipment The decline in Del Norte County was apparent in 1963 In conclusion, the long dependence of the north coast on timber production can in the future be moderated by support from the recreation industries if these are developed in accordance with their potential At present, except for latest possibilities involved in water export there are no comparable industries or sources of income on which the region as a whole can rely Further study of the area should examine the role of new water resource development, and the possible effects of reservoirs, flood control, stream flow maintenance, power, and irrigation. Certainly the effects on recreation and on assessed values will potentially be very great, especially in relation to downstream fishing, trout streams, land developments around reservoirs and highway routes

### Fred Landenberger, secretary-treasurer and manager, North Coast Timber Association

We respectfully suggest that the Little Report on Del Norte County be given serious review by this committee before all of its conclusions are accepted In conclusion, and speaking generally about all of the major park plans, the most critical aspect of these plans is that they would take a substantial amount of the old growth timber that the industry needs the most to carry it over the next 20 to 30 years during its transition to a young growth sustained yield economy Clearly, there are no alternative timber supplies available. The critical comparison in the redwood park issue is not that these plans would take 3 to 5 percent of the total area upon which redwoods grow but that they would encompass more than 25 percent of the remaining old growth redwood timber volume owned by industry

### Henry K. Trobitz, manager, California Timberlands Division, Simpson Timber Company

It is Simpson's view that there should not be a ceiling set as to the amount of private commercial forest acreage necessary to sustain the present level of economic activity. We intend to expand our business and to do so must put into production every acre possible It is not proper to put a lid on an area's economy and say it does not have equal opportunities for growth as other areas We must have available for our use every acre of old growth timber we now own We must live on this during the period when young growth is reaching merchantable size Any reduction of our timber inventory because of parks will affect our log sales to independent mills. In young growth stands we are doing the necessary research to sustain the lumber and plywood economy as well as pulp in the years ahead This is complemented by aggressive product research Already in Humboldt County, 10 percent of the industry is based on young growth This will increase as it has in other forest regions to the point where we are existing totally on young

### Robert Grundman, chief forester, Union Lumber Company, Fort Bragg

If the operators are allowed to maintain their acreages and growing stock there is no reason why the redwood region cannot perpetually have a thriving timber economy equal to or greater than the southern pine region or other timber regions which have successfully made the transition from old growth to young growth We have the soil, rainfall growth capacity, lesser fire hazard, and the better species for manufacturing marketable products. In addition, these species have a remarkable resistance to insects and disease. With proper management and adequate acreages of privately owned timber commercial redwood timber will never be exhausted, it will perpetually replenish itself and at the same time provide protection of watershed and wildlife as well as opportunities for recreation

## Alfred H. Merrill, chief forester, Georgia-Pacific Corporation, Samoa Division, Trinidad, California

Future chip supply and demand is very delicately balanced in this region, there are two new large pulpmills dependent on the limited chip supply If either our or other suppliers' raw material base are taken, this delicate balance of supply and demand will be upset, and either our pulpmill or Crown-Simpson's would be in trouble. Any significant government acquisition of our timberlands would certainly destroy our sustained yield pro-I wish to say we have been mindful of the responsibility of managing these forests in the overall public interest. We have voluntarily withheld from cutting for many years a substantial acreage of our finest redwood groves which we feel are best suited for park area As part of the Redwood Park and Recreation Plan we are joining with other private timber owners to make our private timberlands available for hunting, fishing and other outdoor recreation, and we are making available five miles of access area to enable the public to reach the tall trees on Arcata Redwood Company lands on Redwood Creek And we are managing all our forest lands to assure regrowth and sustained yield in perpetuity. We sincerely hope that this committee will study carefully all of the available information on the redwood proposals, and that fact rather than fancy, logic rather than emotion will prevail

# **D. W. Cooper**, farm adviser, Humboldt County Agricultural Extension Service, University of California ("Coast Redwood and its Ecology. a summary of observations and studies on the ecology and growth of coast redwood," 1965)

"We can perpetuate our redwoods by working with nature to grow new forests where trees have been harvested to meet the needs of society In areas where we have preserved trees for posterity we will need to manipulate the ecology of the area to replace old trees as they die

#### Darrell H. Schroeder, vice president and general manager, Miller Redwood Company and Rellium Redwood Company, Crescent City

"Our timberlands, mostly in Mill Creek, are industrial forest lands. They are managed under a perpetual harvest plan that will produce successive crops over the years. This basic renewable resource will provide a continual flow of raw materials for the manufacture of forest products. Through our studies in germination, tree growth, and yield of this forest, we have gradually developed and are now following a practical and realistic harvesting plan that constitutes a sustained yield operation.

We know our forest resources will produce a sustained-yield cutting cycle. This will be the backbone of the supply of wood necessary to sustain the manufacturing facilities of that day

### Larry McCollum, chief forester, Pacific Lumber Company, Scotia, California

During the past two decades, the Pacific Lumber Company has been actively cutting their timber on a modified selection basis. This selection amounts to leaving an average of 25 percent of the original volume, which amounts to 50 percent of the original trees, in a thrifty, standing condition The purpose of this selection is to provide an immediate seed source to restock the cutover land, to obtain accelerated growth on the thrifty reserve trees, and to defer cutting of the smaller reserve trees until new markets (such as pulp, particle board, etc.) will absorb more of the tree that would otherwise be considered unmerchantable by today's standards Our system of cutting works well in our timber stands, but cannot be considered to be applicable to all stands, such as the more mature redwood timber in the northern portion of the redwood belt We at Pacific believe that there is a place for both sound, well-managed, commercial redwood timber operations as well as practical, sound, well-managed redwood parks, but we must have the proper balance of both, to insure a stable economy and proper benefits to all We must reach and stand on this middle ground that I have previously commented on

#### John Callaghan, secretary-manager, California Forest Protective Association

Recreation planning (especially plans for land acquisition) should be made with full recognition of the need to maintain an adequate private land base to produce food, fiber, etc., to support the economy. In our growing state the need for these products, as well as the demand for recreation, is predicted to increase materially. The \$120,000,000 recently invested in developing three pulp or paper plants in Humboldt and Shasta Counties exemplifies the trend now in progress from a saw-mill lumber economy to a diversified manufacturing economy. This permits making complete use of the raw material, and provides a new product and employment base for the local economies. It also exemplifies the need of the timber industry to have

an assured supply of raw material under its control to support such investments. Without at least a major portion of the raw material definitely assured such major investments cannot reasonably be expected In order to maintain its employment base and hopefully to expand it (which is the goal of most companies) the timber industry must complete the transition to a pulp, fiber, and chip oriented economy To do this will require that young growth forests be permitted to reach full production This in turn requires that existing old growth be fully used to prevent premature cutting of young growth and a gap in raw material supplies Major public acquisitions of private timber, especially old growth, can effectively unbalance and bring to a halt plans for such diversification and expansion

"Now I know that Professor Rudolf Becking has made the prediction that all the old-growth redwood timber on private land will be logged off by 1968 and all the saw-log-size second growth will be cut by 1971. This is a patently ridiculous assertion, as I'm sure that Dr. Becking knows and as this committee or anyone else can see by driving down the highway. I can assure you that most major timber owners will not be fully into a second-growth manufacturing situation for 15 to 25 years and some will still be cutting old growth at the turn of the next century. This old growth is essential to the process I have described."

### **Dr. Henry Vaux** ("Timber in Humboldt County," 1955)

"Today, more than 200 manufacturing plants are using the remaining old growth timber at a rate of about one and one-quarter billion board feet per year And Humboldt County is on the crest of a wave of industrial expansion, having tripled its annual lumber production during the past eight years. But only 18 billion board feet of timber remain on the tax rolls. Loggers have had to reach out to increasingly remote tracts for current cutting. Timber has become scarcer and much more costly. And part of the cutover land appears to support little new timber growth."

# Dr. Samuel T. Dana and Kenneth B. Pomeroy, American Forestry Association ("Redwood Parks in Humboldt and Del Norte Counties, California," 1965)

"For the state as a whole, the Zivnuska report <sup>11</sup> predicts that by 1975 the cut will decline by 1,300 million board feet on private lands, and will increase by 500 million feet on public lands Regionally, the projected decrease will be concentrated in the north coast, where its impact will be heavily felt. The necessity of adjusting to a decline in total output and of changing from the manufacture of dominantly old growth timber to dominantly young growth and residual timber will

create serious problems both for the forest products industries and the communities dependent thereon The north coast counties of Del Norte, Humboldt, and Mendocino are now in a process of transition from a frontier region where logging and lumber manufacture have provided the foundation for its economy to one where a more diversified base will be essential for its continued prosperity With the approaching disappearance of the virgin timber, increasing attention will have to be paid to the production and utilization of second growth stands Adjustments will be necessary in logging and milling equipment and methods New products must be sought through the remanufacture of lumber and through chemical utilization

"In an industrial era the possibility of introducting industries other than those based on wood should be thoroughly explored Careful land-use studies should be made to determine the lands best suited for agriculture and for what kinds of crops and livestock Ways of building up both commercial and sport fishing should be investigated

"Tourism will not develop into the bonanza that many anticipated without careful planning Attractive areas and facilities for outdoor recreation activities of many sorts must be made available, both in parks and elsewhere Ways of making more extensive and effective use of privately owned lands should be sought

"Many problems exist in the field of public policy. How effective are the present rules of forest practice, should there be any change in their content and enforcement? With the steady replacement of old growth timber by young growth, its present legislation relating to the taxation of timber and timberland satisfactory both to owners and to local communities, if not, what changes should be made?

"What should be ultimate goal for the redwood state park system, how can it be attained? Is a national park desirable, if so, where and of what size? Should the state and federal governments make payments in lieu of taxes to local governments on lands in public ownership? How are plans for scenic highways developing, can scenic easements be used satisfactorily in the creation of attractive scenic corridors? How can rural zoning be used to develop the most effective pattern of land use?

"These are samples of the kinds of questions to which the region should be seeking answers in order to shape a future that will be even more prosperous and more stable than in the past John C Merriam had such a study in mind in 1937 and Newton B Drury urged it again in 1946

Direction of the planning study could perhaps best be assigned to a relatively small committee consisting of leading citizens whose experience, knowledge, character, and judgment would command respect. The task of preparing an effective regional plan is a difficult one but thoroughly worthwhile.

<sup>11 &</sup>quot;Economic Development Prospects for the Commercial Forest Resources and Forest Products Industries of California," Octo ber 1963, Zivnuska, Cox, Poli, and Pesonen

Dr. George H. Allen, fishery research consultant, and Dr. Rudolf W. Becking, forest research consultant ("Some Relationships Between Redwood Parks and the Humboldt County Economy," March 1966)

"In 1965 a group of Humboldt County residents called Citizens for a Redwood National Park adopted a statement of policies and program which included a major premise as follows

"A national park should not be established for the express purpose of realizing from it some economic gain. If accompanied by adequate local and regional planning for the proper management of all recreational and scenic resources of the region, such a park can form a fundamental part of a recreational industry from which local communities can derive permanent and increasing economic benefit

"To form intelligent opinions on this matter all data available must be presented in order to reach rational conclusions on the past, present, and future of Humboldt County's economy with respect to formation of any national park. The major products which the county's forests provide are wood products and recreation There is a lumber industry and there is a recreation industry. It is especially important to citizens of Humboldt County to understand the changing relative importance of these two industries in our county Thus the relative roles that the recreation industry based on redwood parks can and will play in the county's future is a vital local issue This report is in the public interest if for no other reason than to fulfill a basic need in a democratic society the right of every citizen to be presented facts on both sides of an issue.

"If, in fact, Humboldt County is dependent on lumber for more than 70 percent of our economy as maintained by many Humboldt County organizations, then to this industry's operations one must turn to assess the county's economic conditions, both good and bad Initially one must face the following implication any area dominated by a single industry is subject to serious and recurring economic depression, public apathy, and associated political, social and economic ills Thus to diversify with new industries, as well as diversifying within established ones, is a cold hard necessity for the county

"During the past decades, Humboldt County has not been in the mainstream of population growth in California and the United States Whether this was desirable or undesirable can be argued cogently either way. The population only jumped after World War II when a postwar demand for lumber, especially Douglas fir, threw open the county's resources for profitable exploitation. As Vaux (1955) pointed out, this period in the late forties showed a demand for lumber in the United States greater than had existed during the previous 40 years. Only northern California and southern Oregon had virgin forests left to meet the

demand A resulting huge precipitate increase in cut was shown The population curve has now leveled off for Humboldt County What is happening at the same time in our local economy?

"How lumbering influences Humboldt County's economy can be discussed with reference to three concepts

- "(1) Sustained timber yield
- "(2) Sustained tax revenues (not just land tax alone, which is not the major sustained element in county tax revenues)
- "(3) Sustained employment of people (workers, jobs)

#### Sustained Timber Yield

"In dealing with this topic is must be remembered that statistics are not readily available because most of the lumber economy in Humboldt County has always been and still is in private ownership. It seems self-evident that possession of data adverse to one's position will not be given wide distribution voluntarily. Therefore, it has been necessary to use such general trends and figures which have been published by agencies other than the industry itself to understand the changing status of this industry in our county. A similar difficulty was encountered by Siegel (1965) in attempting to project the status of the lumber industry in Humboldt County's economy to 1975.

"There is no question that Humboldt County is blessed with one of the most productive forest areas in the world. If managed properly this region should be able to produce continuously large volumes of timber, and lumbering should remain one of the primary economic activities in the county. However, the level of "sustained" timber yield depends largely upon the available resource and the forest management practices of the past and present

"Since World War II significant improvement in the mechanization of logging operations was achieved with the introduction of the crawler-type tractor and the logging truck This equipment made it possible to handle heavy redwood logs. At the same time, the nation's timber supplies were dwindling and northern California and southern Oregon were discovered for their vast amounts of virgin redwood and white woods Formerly, the whitewoods, Douglas fir and grand fir, were considered only weed species This discovery, as noted previously, started increased lumbering, and huge investments were needed to purchase the special logging equipment and to build the plants geared to virgin timber sizes

"This created an explosive economic boom in Humboldt County with a great influx of people and logging companies Small local timber ownerships were rapidly replaced by big lumber business. As a consequence, lumbering far overextended the productive capacity of the land as far as growing timber back at the rate it disappeared. The combined development of the modern chain saws and logging trucks aided in this overproduction.

activities started about 1946. One inevitable consequence to timber locally occurred when the market price dropped drastically in the late 1950's A lumber depression then hit the northern counties from which the lumber industry is now slowly recovering It also became equally clear during this recession period that the existing cutting rates could not be sustained, and many of the smaller logging companies were liquidated Independent studies have estimated that the present rate of cutting is still about 2.5 times as fast as the growth rate of the available second-growth timber Furthermore, "sustained" timber yield at present production levels is now in jeopardy because of the small and limited acreages available in old secondgrowth timber from the early days of logging as compared to the vast acreages of recently cut stands This situation is most serious for whitewoods which bore the brunt of the boom exploitation occuring after World War II The situation is also precarious for redwood production in the immediate future. All this leads to a great imbalance in timber stands (Miles, 1963, Branch and Lewis, 1964) Our remaining virgin redwood is important to lumbering in their attempt to bridge some sort of a transition period from an old growth to a second growth economy However, in spite of the knowledge of this impending condition, no obvious steps have been taken by the lumber industries to curtail timber production in order to bring it in to balance with the natural productive capacity of the forest land, and to equalize the great disparity in age classes of timber acreagewise

"Siegel (1965) noted this problem for Del Norte County where the average annual cut from 1958–1962 was 291 million board feet (mbf) Siegel points out that if cutting level was dropped back to 205 mbf now it might allow sustaining such a level of cut until 1985 (italicizing added)

"Students of the sustained-yield principle have tried to estimate that the growth rate of second growth timber will be in balance with the depletion of timber in 1980 (Miles, 1963) Should growth balance out by 1980, it would certainly not apply to each ownership acreagewise Perhaps more important is the fact that timber quantity does not ultimately contribute to timber quality (e.g. Dickinson, 1966). Due to growth characteristics it is a well recognized fact that second growth timber, especially redwood, demands a far lower market price than old growth timber, and that under current economic conditions harvest and thinning operations in 80-100-year-old superlative second growth stands are economically unfeasible Besides that, the yield on a per acre basis of a second growth redwood stand of 100 years of age is approximately only 1/10 of that of an acre of virgin timber (100,000 board feet vs 1,000,000 board feet on the average gross yield) It is certainly true that the amount of growth being added each year on young timber is greater than growth added to a mature tree, but the economic value and utility of the young tree is greatly inferior Consider-

ing only timber volume, however, sustained yield at present cutting levels would require up to 10 times as much acreage of second-growth timber compared to old growth acreage because any harvestable second growth timber present now has to be found on those lands cut 80-100 years ago No one has ever indicated where such extensive acreage exists in Humboldt County Evidence of this can be appraised by anyone noting the country around the Redwood Region Conservation Council members' demonstration forests which are in the heart of any such potential In general, even under perfect growing and management conditions, it will take some 80 years to grow a mature timber stand At this very moment no reduction in the accelerated production of timber is evident, and therefore the industry is making it more difficult to bridge any interim period for our local lumber economy The creation of a national redwood park must not be used to divert attention from the fact that a considerable reduction in the local forest economy is about to occur It must be emphasized that for any sustained timber yield at the present level of production we have to look primarily to those areas of limited acreage exploited by the early days of logging Lands that must sustain the current cutting rates and timber yields have to be at least equal in size to the land from which the timber now is being removed. However, there is not sufficient acreage available from the old days of cuttings With the increased acreage of bare land, forest regeneration becomes problematic and uncertain In 1952 an estimated 183,000 acres of understocked or nonstocked private forest land existed in Humboldt County alone (US Forest Service, 1952) Dana and Pomeroy (1965) reported on surveys which indicated that nonstocked or understocked redwood-type forest lands amounted to 320,000 acres in the redwood region or 20 percent of such lands! The imbalance for such a situation is going to have a serious impact on the level of our forest economy regardless of a national park

"Any attempt to predict the level of timber cut in some future period must have data on present cutting rates, existing acreages, and growth rates on the many different sites on which various species grow. All such data are now in scarce supply Siegel (1965) used information from Miles and Vaux mainly for his analysis on Humboldt County, which was the best data available for any north coast area From these data Siegel indicated that the cut would drop to around 10 billion board feet per year around 1980 This is equivalent to about 0 75 billion board feet of lumber production This would indicate about a 50-percent reduction as compared with the present levels of production Siegel also noted that the greater the degree of excess cutting done now, the lower will be the level of sustained cut which will occur in the transition period.

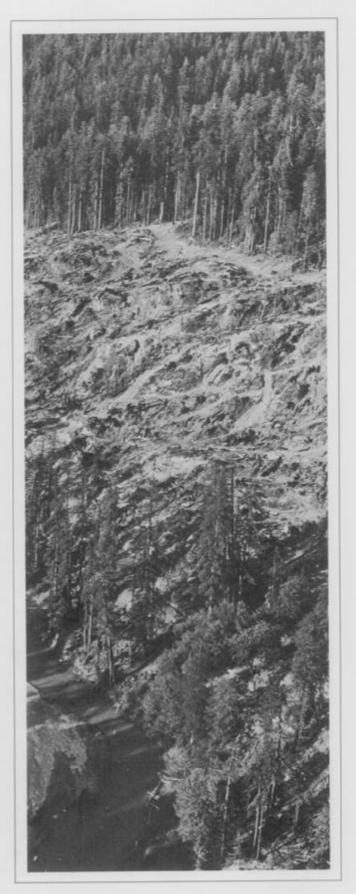
"An even more recent study indicates a virtual depletion of old growth timber in Humboldt

County by 1968, if present cutting rates for the county as a whole continues (Mather, Becking 1965). In 1953 (Vaux 1955) indicated privately owned mature timber at 35.6 billion board feet. In 1963 the Humboldt County timber cruise showed 13.5 billion board feet of such stands. Using public records of lumber, plywood and veneer production, the amount of standing timber volume cut was computed for each year from 1953 to 1963. Subtracting each year's cut from the 1953 volume noted above, a figure was obtained which was only 1.2 percent from the volume reported in 1963 by a timber cruise conducted by the Humboldt County assessor's office. The total rate of cut in 1963 was 2.5 billion board feet. Continuing this rate of cut leaves a projected 1 billion board feet of mature timber in Humboldt County in 1968! Undoubtedly individual companies will have to slacken their rates of cut to extend such activities a few years longer but the seriousness of the impact from a reduced lumber production is quite apparent.

"It is obvious that the creation of a redwood national park taking say 25,000 acres of additional virgin timber out of commercial use would mean little to the long-range sustained timber yield picture of Humboldt County. It may, however, have deleterious effects upon the forest management of a specific company, but not for the redwood region of the county as a whole, The national demand for redwood would still be met by cutting into the bulk of the remaining virgin redwood which will remain in private ownership!

"A national park taking additional virgin redwood acreage might create the inevitable transition to a second growth economy a few years earlier than otherwise. The creation of national park conceivably would even help to adjust the present imbalance in age-class distribution of trees and overproduction of lumber. The creation of a national park can only help indirectly the day when Humboldt County will be *forced* into a sustained-yield principle of forest management which any stable lumber economy demands. What the level of that yield will be in the future when actual cut does become stabilized is in serious dispute . . . "

In view of the clear conflict in data and opinions concerning the commercial future of the redwoods outlined in the foregoing statements, and in the absence of more substantial agreement on the economic prospects of the north coast counties, the committee will not attempt to make any judgment concerning the overall subject. It seems apparent, however, that the confusion and conflict surrounding this dimension of redwoods management makes a broadly based, orderly study of this problem—with the objective of reaching conclusions everyone can agree with—not only desirable, but vitally essential to the public interest.



#### Recreational Values and Utilization

Although the contradictions make a definitive long range assessment of the commercial prospects for redwoods management impossible, the recreational significance of the coast redwood forest is generally accepted by all contending interests. The debate over this aspect of their management centers mainly on such considerations as how many acres of what kind of trees should be preserved—and where. Because of the high market value of standing redwoods—especially old growth trees—this argument of course has a direct relationship to the commercial management aspects.

Whatever else is said, it is clear that the redwoods are a unique natural resource, which is an obvious consequence of their large size as the tallest living trees, their great average age, and their many unusual characteristics (which among other virtues also accounts for their

commercial value) such as a stubborn resistance to fire, insects, disease, and rot, the fact that they are living relics from the Age of Dinosaurs, and they are found naturally nowhere else in the world. In addition to these factors, however, are the special inspirational qualities so impressive to the visitor, especially from the primitive trees in a natural setting relatively undisturbed by man. Therefore, from the recreational point of view, the concern is basically with maintaining virgin redwoods in a forest and watershed possessing ecological integrity insofar as it is possible to achieve, and in an amount sufficient to ensure long-term survival, meet projected recreational requirements. and provide a maximum variety of recreational experiences. Although young growth trees also possess important recreational values and uses, the quality of the recreational experience they impart cannot reasonably be compared with that of the thousand-year-old redwood climax forest and its associated natural features.



This unique inspirational and recreational value has been long recognized, even by the redwood lumber industry itself, although progress toward the preservation of some of the remaining old growth trees was achieved only slowly and painfully. In fact, prior to World War II only a few small isolated, widely separated groves had been set aside, none of which contained the truly superlative trees of the north coast. Responding to the lack of interest by the federal and state government in the matter, several distinguished private citizens founded the Save-the-Redwoods League in 1918, which over the years under a policy of mutual cooperation with government and industry, has contributed to the acquisition of some 100,000 acres of state redwood parks, of which approximately 50,000 acres contain oldgrowth trees, the major stands of which are in Humboldt, Prairie Creek, Del Norte Coast, and Jedediah Smith Redwoods State Parks.



Because of increasing threats to the ecological integrity of the preserved redwoods from freeways, erosion, potential overuse, logging practices, and other sources, and the resulting uncertainty as to the long range ecological viability of existing units, in 1965 the state completed an overall plan for long-range management of the recreational uses of redwoods. This study, which was titled the "North Coast Redwoods Master Plan," identified some 80,000 acres of land in Humboldt and Del Norte Counties with direct influence on the protection, development, and display of the four major state parks previously noted, parks which also provide the best remaining opportunity of preserving outstanding examples of primeval coast "Redwood Country." Some 45,000 acres of land (6,500 old growth; 38,500 young growth) were proposed for acquisition, a portion of which has subsequently been acquired. Some of this recommended acreage is being held for eventual purchase by the state, and some is being logged. The industry has generally opposed the acquisition of the young growth acreage as being unnecessary, with the state contending that it is necessary for watershed protection and the development of visitor facilities.

The concept of the national park, as with most programs oriented toward the preservation of unique natural resources, was a long time developing, and although first recognized in principle by President Lincoln in 1864 when he signed the act creating Yosemite Park, the Yosemite area was actually granted to the State of California, with accompanying federal recognition of the need to preserve this unique scenic resource. It seems clear, however, that there was substantial acceptance in the Congress that this grant was of nationwide significance. The first "national park" in name as well as concept was Yellowstone National Park, created in 1872, with Yosemite not receiving such official status until 1890. Subsequent definition and general acceptance of the principles justifying the creation of a national park was a slow process, and not until recent years has there been a widely accepted statement of criteria. The United States has nevertheless over the years acquired the finest system of national parks in the world, and it has served as a model for similar efforts throughout the world.



justification for a Redwoods National Park was made in 1895 by Professor William R. Dudley—an early member of the Sierra Club when he urged the " . . . immediate establishment of several redwood national parks, under the control of the United States government . . . " President Theodore Roosevelt, though an active and articulate conservationist, took no positive action toward this goal, although he expressed his concern over the eventual fate of the redwoods on numerous occasions. Since that time continuous but sporadic efforts have been made to establish such a national park. and as early as 1920 the Congress ordered a survey with the establishment of a national park as its objective. Although the survey recommended the creation of such a park, no action was taken. In 1946 Congresswoman Helen Gahagan Douglas introduced an unsuccessful bill to establish a Franklin Delano Roosevelt Memorial Redwood Forest.

Finally, in April 1963 the National Geographic Society financed an overall study by the National Park Service of "the most effective means of preserving an adequate segment of redwood forest to guarantee their protection and provide for appropriate use and enjoyment by the public." This study, which was released in September 1964, concluded that "... the significance of the redwoods as a part of our heritage justifying preservation does not need arguing; it is accepted. Since the turn of the century, it has been recognized. Time and again it has been reaffirmed by people across the country. Just so, this year, the proposed routing of freeways which threatened some of the redwood state parks brought a statewide and nationwide storm of protest . . "

The report, which contains an extensive analysis of the history and present status of both the commercial and recreational values and utilization of the redwoods, outlines in great depth all remaining areas of old growth trees and associated features meeting the established criteria for a national park, and the prospects for long term survival of the preserved virgin areas, regardless of their status The conclusion was that ".. there is an urgent need now to shore up and consolidate the preservation position in the existing redwood state parks, and to set aside additional acreage of virgin growth This is judged to be in the national interest, in fact essential, if continuing attrition and encroachments are to be offset, and if opportunity is to be provided for future generations in increasing numbers to see and enjoy these magnificent forests to the full.

"To add bits and pieces here and there will not do the job. A major addition is required and one preferably which would add not merely size, but high quality redwood groves and forests in a situation where, so far as possible, they can be preserved, interpreted, and made available to the public as outstanding examples in an outstanding manner. Far too easily the natural heritage we 'preserve' may end up as a watered-down experience seen hastily and superficially from a fast-moving car

"This does not mean that all remaining virgin growth should be so reserved That would not be either reasonable or feasible

"Along with these objectives and as a part of the formula, opportunity exists to preserve additional stands of redwood along highways or still attractive streams, and to incorporate in redwood parks wild beaches, bluffs, and ocean frontage which could be a wonderful part of the coast redwood picture. Today these opportunities are reduced almost to the vanishing point.

"Public ownership of such attractions would tend also to correct an existing situation of some awkwardness. Today where redwood stands in private ownership occupy such pub-

licly attractive sites, the owners for the most part have refrained from harvesting the timber—recognizing the long term public interest, or in some cases, frankly, to avoid incurring public wrath At the same time, they continue to pay taxes.

"One important conclusion points to the significance that cooperation between conservation interests and industry could play, quite possibly to mutual advantage A good example is the question of full watershed control to safeguard important groves or forest stands which lie downstream One solution, of course, is public acquisition But in some cases, it appears that a sound coordinated management plan could leave the upper drainages in private ownership and still assure protection to downstream values. This might be particularly true where cutting has already seriously disturbed the ecological integrity of the drainage . . . "

The study recommended three alternatives for creation of a Redwoods National Park, all in the Redwood Creek-Prairie Creek area (See Appendix, page 48), and in addition recommended federal aid to the state to round out existing redwood state parks and protect additional forests along the highway, including extension of the Avenue of the Giants

Following publication of the study and recommended alternatives in September 1964, the National Park Service devoted a period of time for reactions, and after review of the numerous responses, disregarded the essence of its own alternatives and recommended the creation of a national park in Del Norte County (See Appendix, page 49A) by the combination of Del Norte Coast and Jedediah Smith Redwoods State Parks with an additional 7,800 acres of virgin and 11,000 acres of young growth redwoods in the connecting Mill Creek watershed. In addition, it proposed the acquisition of the Tall Trees Unit on Redwood Creek —some 650 acres of old and 750 acres of young growth trees It was acknowledged that the acquisition of the Mill Creek acreage would force the Rellin Lumber Company to cease future operations, and provisions to relieve both the reduced tax base and interim unemployment were included in the legislation introduced by Senator Thomas Kuchel of California in the 1966 Congress and supported by President Johnson Action on this proposal was not taken by the Congress in 1966.

The publication by the National Park Service in 1964 of its preliminary proposal for a Redwoods National Park spurred a number of other plans for recreational utilization of the redwoods, as outlined below (See Appendix, pages 49A-J, for maps of various proposals for recreational utilization of the redwoods):

#### 1. Sierra Club, October 1965.

The proposal of the Sierra Club, which is sponsored in the Congress by Representative Jeffery Cohelan and a number of congressmen and senators, is the major alternative to the Mill Creek watershed proposal of the Johnson Administration It is essentially an extension to some 90,000 acres of the largest (53,600 acres) of the three alternatives originally proposed by the National Park Service in the Redwood Creek-Prairie Creek Area of Humboldt County. It includes some 77,000 acres (33,700 acres new virgin growth and 43,300 acres of second growth) under private ownership, and some 13,000 acres of old and young growth redwoods under public ownership in Prairie Creek Redwoods State Park It is by far the most expensive of all the proposals, with estimates for the acquisition ranging up to \$150 million, as compared with estimates of one-third this amount for the administration-backed Mill Creek proposal in Del Norte County

### 2. State North Coast Redwood Master Plan, April 1965.

This proposal has been noted previously. with the study upon which it was based being initiated in October 1963, some six months after commencement of the National Park Service study, which was released in September 1964. Briefly, the State Master Plan identified 80,400 acres of land in Del Norte and Humboldt Counties which influence directly the protection, development and display of the four major redwood state parks-Jedediah Smith, Del Norte Coast, Prairie Creek, and Humboldt Redwoods State Parks These four parks, the common denominator of the current redwood preservation movement, contain approximately 40,000 acres of primeval redwood, or about 80 percent of the 50,000 total acres of primeval redwood within the state park system The study recommended the acquisition of approximately 6,500 acres of old growth redwoods and 38,500 acres of young growth redwoods in crucial areas for a total of 45,-000 acres Subsequent further refinement of these requirements indicated that a minimum of 1,600 acres of old growth and 14,400 acres of young growth redwoods were absolutely essential to the minimum consolidation of the four existing state parks by the acquisition of inholdings, the preservation of key tracts, and providing lands suitable for development. The minimum plan also envisioned the leasing of some 2,600 acres of timberland on a long-term basis for the development of public recreational facilities In December 1965 the State Park Commission adopted this minimum plan for immediate acquisition, and concluded that the final master plan must await the final determination on the national park

3 American Forestry Association, April 1965. This study, which was initiated by Samuel T Dana and Kenneth B Pomeroy in October 1964, and supports strongly the justification for creation of a Redwoods National Park, recommends specifically the transfer of Humboldt Redwoods State Park to the federal government for administrative purposes It also recommends rounding out of the integrity of other state parks. In addition, because of the confusion, conflict, and inadequacy of relevant data, and the importance of this overall problem to the future of the north coast, it was recommended that a long range regional economic development plan be formulated

### 4 Redwood Park and Recreation Plan, April 1965

This proposal, which is sponsored by the north coast timber industry, opposes the creation of a national park and and the proposal of the state master plan for the acquisition of peripheral young growth lands. It generally supports the acquisition of key old growth stands set aside by the industry and included in the state master plan, and also proposes to open up some 364,000 acres of largely cutover timberland for public recreation. The state responds to industry disapproval of its proposal for the acquisition of peripheral lands by maintaining that these lands are absolutely essential in the selected areas to preserve old growth and

young growth stands of redwoods and other species in a wide range of age classes, to preserve ecological units of adequate size to ensure perpetuation, to protect groves from erosion caused by logging on upstream watersheds, to provide sufficient space for such recreational activities as picnicking and camping, and to facilitate administration

 Redwood Regional Park Plan, November 1965.

This is the most ambitious of all the proposals made to date, and was advanced by Dr Rudolf Becking, a professor of forestry at Humboldt State College and a forest research consultant, and Mr. Deane Mather, a private forest land manager. It envisions a comprehensive regional approach to the recreational uses of redwoods, and contains a number of imaginative—and controversial concepts Among other things, it is based upon the premise-disputed by many-that the north coast region is due for a severe economic recession in the near future as the result of rapid and uncontrolled depletion of old growth redwoods, inadequate young growth timber supplies, slow forest regeneration in many areas of the region with a substantially changed tree species as compared with the original forest crop, and chronic unemployment. It takes the broadest possible approach to the overall problem by recognizing California's long range recreational deficiencies, and provides a partial answer thereto by proposing the development of a huge 210,000-acre recreational area in Humboldt and Del Norte Counties with a large variety of redwood and wateroriented recreational opportunities The plan is composed of three major components—a 73,900-acre Redwood Creek National Park preserving the most unique remaining virgin redwoods and the world's tallest trees, including a new 385-foot recordholder recently discovered by Dr. Becking, yet to be officially verified; a 62,000-acre Klamath Wild River Area providing boating and fishing opportunities, and a 75,000-acre Southern Recreational Area with extensive acreages of good quality second growth redwoods. which with the construction of five small- to medium-sized dams and associated lakes. would provide a variety of recreational opportunities It is envisioned that the creation of this regional recreation area has a number of advantages, including maximum opportunity for visitor dispersal, the preservation of the world's tallest and finest redwoods in a national park, an economic infusion for all local businesses, adequate in-lieu tax payments in the form of severance and rebate tax revenue payments to local communities, and in toto a strong and active year-round recreational industry with unlimited growth potential for the north coast.

6 Pacific Redwood National Park and Seashore, June 1966.

This proposal by Conservation Associates suggests the creation of a 159,000-acre park, of which 14,000 acres is water surface area, including Humboldt Redwoods State Park (56,000 acres as enlarged), 64,000 acres in the adjoining Mattole Valley and King Range, and 8,000 acres at Del Norte Coast and Jedediah Smith Redwoods State Parks Most of the additional contiguous acreages in the Mattole Valley and King Peak areas are cutover private lands or are presently under federal jurisdiction in the King Range

7 National Redwood Park, Recreation, and Seashore Plan, November 1966.

This most recent proposal by Congressman Don Clausen of California is a recombination of many previous proposals, and apparently is essentially a transfer to the federal government of various existing state park units, as well as adding the small acreage of Tall Trees in Redwood Creek. It is composed of a 46-mile "redwood seashore" extending from Del Norte Coast Redwoods State Park to Patrick's Point State Park, the Tall Trees unit on Redwood Creek; the transfer of King Range from the federal to the state government for administration with Humboldt Redwoods State Park, and the completion of acquisition in the Point Reves National Seashore in Marin County



### FINDINGS AND CONCLUSIONS

THE CONTROVERSY over management of the redwoods is not new; it has persisted to some degree for more than a century. However, it has intensified in recent years as the result of a growing awareness by the general public that the last of the old growth trees in private ownership will be cut in a few years. This awareness, moreover, has been translated into concern over the prospects for ultimate survival of the existing old growth trees under public protection (but in view of its remarkable regenerative capabilities, generally not over its ultimate survival as a species, as has been suggested in some quarters) as the result of extensive recent publicity of excessively destructive logging practices in the past, and certain current techniques such as clear cutting, a procedure which, while there may be disagreement over its relative effectiveness as a forest management technique, generally produces a most disapproving reaction on the part of the public.

As in any such complex and controversial area of resources management, inevitable—and in some instances seemingly irreconcilable—conflicts over redwoods management have arisen. Because of the tendency of each contending interest to look at the problem from his own point of view and to interpret the same—or different—statistics and other information differently, it is impossible for anyone to be certain of the truth of any given premise. However, implicit in the maze of conflicting concepts and statistics is one fundamental question which must eventually be answered to everyone's satisfaction before there can be any hope that the controversy will ultimately subside:

Is there a long range future for both a viable second growth redwood industry and major recreation industry oriented around the primeval redwoods in the north coast counties?

The answer to this question is of course dependent upon the answers to such corollary questions as how much old and young growth redwood is necessary for the appropriate level of indefinite sustained productivity (for specified products) by the *industry* (not individual companies), and how much old and young growth redwood (and where) is necessary to provide the appropriate recreational experiences and opportunities, and the long term ecological and watershed integrity required for survival of the preserved old growth trees

It appears to be suggested by some that these two objectives are indeed mutually exclusive, and that such incompatibility makes the selection of one or the other goal the only realistic alternative in the long run Although this committee developed probably the mest comprehensive record to date on this entire problem, the conflicting nature of much of the data makes it impossible to reach a conclusive answer to the question. Therefore, until more definitive and generally agreed-upon data is forthcoming, this committee will attempt to make no judgment concerning the overall question

However, because of the near unanimity of public, governmental, and professional support throughout the state and nation for the establishment of a Redwoods National Park somewhere in the region, and the compelling arguments for the need to ensure the maximum possible protection of the existing preserved old growth redwoods, this committee finds it clearly and positively in the public interest that such a park be created.

Although one of the arguments in opposition to the park is that the setting aside of additional private lands for public recreation will have a crippling effect on the economy of the entire area, it appears to the committee that such a conclusion tends to be overstated for the following reasons:

First, provisions will be included in the legislation creating the park which will offset any interim decline in tax revenues and unemployment which may result While there is a major difference of opinion concerning the longrun effect of a national park on regional tourism, it seems reasonable to project some increase attributable to creation of the park, the net effect of which will compensate to some degree for any short-term economic loss related to

the park acquisitions. Beyond this it seems clear that recreation is of vital importance to the future of the north coast, the exact dimensions of which must await a comprehensive assessment of the long-term regional economy Second, it does not seem likely that the consequences of the proposed limited withdrawals of private lands—even under the most ambitious of the proposed alternatives—could produce the profound effects upon the economy of the entire region as is suggested. It is obvious that significant withdrawals will affect the future operations of one or more individual companies to a greater or lesser extent—which is of course to be regretted-but with the hundreds of thousands of acres of redwoods currently under long-term management for sustained productivity 12 it would seem entirely feasible to make the appropriate adjustments in long-range cutting cycles on an industry/areawide basis Third, cash compensation at full market value will be paid to the owners for lands included in the park and, therefore, no direct financial loss should be sustained as the result of the establishment of the park

As a final conclusion, the committee supports the objectives of the State North Coast Redwood Master Plan, which proposes the acquisition of certain minimum acreage of old and young growth redwoods to round out and protect the existing state parks and provide areas for the development of visitor facilities

"There are in addition 128,000 acres of redwood-type lands in public ownership, under sustained yield management, making a grand total of 1,097,000 acres now being managed for timber production on a long range basis

for timber production on a long range basis. Of the estimated 21 billion board feet of old-growth redwood, some 45 billion are reserved in state parks. Of the 165 billion on commercial forest lands, 145 billion are on those conservatively held private ownerships, 15 billion on national forest and other public lands, and the balance, about 05 billion, are on small, private holdings.

'Information regarding second-growth redwood timber is less accurate and detailed as to ownership, but somewhat more than one-half of the 13 6 billion feet is on large private ownerships under conservative management."

'The Effect of Commercial Operations on the Future of the Coast Redwood Forest," 1963, John Gleason Miles, Consulting Forester, p 14. Assembly Committee on Natural Resources, Planning, and Public Works, transcript, July 15, 1966

There are 856,000 acres of redwood-type lands held by the 16 major forest land owners in the region (owning 20,000 acres or more each), 59,000 acres of redwood owned by substantial redwood producers, ranchers, or others who have placed their lands under professional forest management, and who own their lands under professional forest management, and who own 5,000 acres or more each, and 54,000 acres of redwood-type lands on certified tree farms of less than 5,000 acres each Thus the total acreage of redwood lands known to be in private forestry ownership is 969,000 acres, or approximately 54 percent of the total 1,790,000 acres of private commercial redwood lands

### RECOMMENDATIONS

#### . . . Concerning the Redwoods National Park

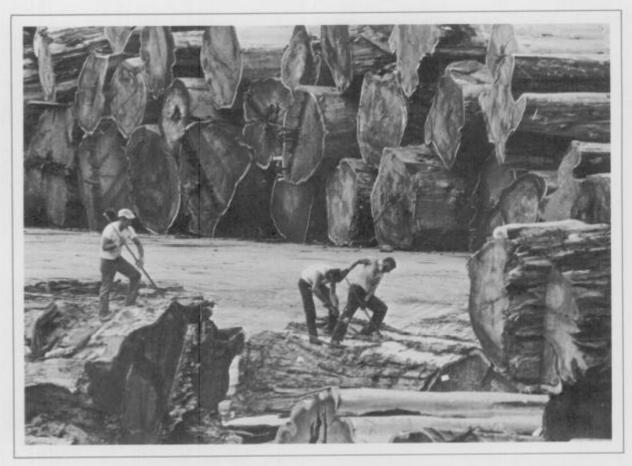
The Committee recommends that a Redwoods National Park be established in the Redwood Creek-Prairie Creek area of Humboldt County. In determining the size of the Park, maximum effort should be made to achieve a balance in cooperative watershed management and public acquisitions which will maximize both the recreational and commercial uses of the area, consistent with the purposes of a national park. Appropriate provisions should be made to offset the impact of the establishment of the park on the local economy

The justification for establishing a Redwoods National Park in the Redwood Creek-Prairie Creek area is found in the following considerations.

- 1 The significance of the redwoods as a part of our national natural heritage justifying preservation under national park status is accepted, and has received the nearly unanimous support of every major interest, including the general public, with one exception the redwood lumber industry, and a portion of the economic community related thereto.
- 2 The redwoods meet fully the tests of national significance, suitability, and feasibility applied to natural areas evaluated for inclusion within the national park system
- Because of continuing attrition and encroachments on the preserved old growth stands, a continuing depletion of privately owned stands of old growth park quality trees, and the need to provide maximum possible ecological integrity for watershed protection and maximum visitor experiences and interpretation, there is an urgent need now to preserve additional acreage of virgin old growth in a major redwoods park

- 4 Because the legal protection afforded the preserved old growth redwoods under state park jurisdiction is uncertain and subject to change, the best possible example of this preserved national heritage deserves the fullest possible measure of protection under federal laws.
- 5 The Redwood Creek-Prairie Creek location provides a large variety of options for both the preservation and continued commercial utilization of various portions of the watersheds
- 6 The Redwood Creek-Prairie Creek drainages provide the largest remaining uncut block of virgin growth not preserved, and in the opinion of the National Park Service the most significant large block in terms of park values
- 7. The Redwood Creek-Prairie Creek area provides by far the greatest variety of ecological and natural features and consequent opportunities for the varied recreational experiences to be expected in a national park
- 8 The geography and varied attractions of a park in the Redwood Creek-Prairie Creek area provide ample opportunities for visitor dispersal throughout the area
- 9. While the extent of impact on commercial operations is subject to the final plan for a park, it can be much better absorbed within the broader economy of the Humboldt County area, especially with the provisions for mitigating the interim tax loss and any increased unemployment which would be included in the enabling legislation.

National Park Service, Bureau of Outdoor Recreation, Save-the-Redwoods League, American Forestry Association; Sierra Club, Wilderness Society, National Audubon Society, National Parks Association, Men's Garden Clubs of America, Nature Conservancy, Citizens' Committee on Natural Resources, Citizens for a Redwoods National Park, Federation of Western Outdoor Clubs, Izaak Walton League, California Division, Wildlife Management Institute, Public Affairs Institute, Trout Un limited



The Case for a Park. In a recent publication of the National Park Service, Director George B. Hartzog, Jr., said the following: "... In 1966 the National Park Service celebrates its 50th anniversary. Entering upon a second half-century, its long-range program is designed to mobilize the resources and capabilities of the National Park Service in support of a new conservation.

"Entitled PARKSCAPE—USA, and sustained by the vitality of the National Park idea, the program pledges the service: to make the beauty of the land and the history of our nation a richer and more meaningful part of the daily life of every American; to renew beauty where it has already been destroyed; and to seek out and protect the surviving landmarks of our national heritage.

"One of the vital elements of conservation in any country in any time is the preservation of those places of beauty and history which give meaning and substance to the national character.

"This is neither antiquarianism nor barren pride in past glory or scenic wonders. It is something that gives us deep assurance and a sense of destiny and a determination to hold on fast to the great things that have been done through valor and imagination by those who have gone before us.

"If, in our time, we are to conserve the great cultural and natural resources of this nation, it will demand the combined efforts of federal, state, and local governments, citizens' organizations, and individuals . . . "

In view of the growing concern of people with the quality of an environment which is facing a growing deterioration as the byproduct of explosive growth, this statement of basic National Park Service philosophy holds an even greater meaning than when the service was founded 50 years ago. The eloquence and persistence with which leaders in every walk of life—including the President—are voicing their concern over the impact of national growth on the environment gives added importance to those policies designed to mitigate the consequences for ourselves and future generations.

The national policy as articulated by the Congress over the years and administered by the National Park Service has as its objective "the preservation of outstanding examples of this country's natural and historic resources for the benefit and enjoyment of the people" In carrying out this policy, the Park Service has developed two major programs — the administration of national parks and other areas established by the Congress as part of the national park system, and the administration of the Registry of National Landmarks, which encourages the preservation of natural and historical properties under other ownerships

The national park system consists of three categories of areas — natural, historic, and recreational — with natural areas containing the great scenic wonderlands of America — the unspoiled mountains, lakes, forests, desert canyons, and glaciers. In assessing the feasibility of sites for national recognition as natural areas as part of the national park system, the following criteria are applied:

#### I National Significance

- A Areas which possess exceptional value or quality in illustrating or interpreting the natural heritage of our nation, such as
  - 1 An ecological community significantly illustrating characteristics of a physiographic province or a biome
  - 2 A biota of relative stability maintaining itself under prevailing natural conditions, such as a climax community.
  - 3 An ecological community significantly illustrating the process of succession and restoration to natural condition following disruptive change
  - 4 A habitat supporting a vanishing, rare, or restricted species.
  - 5 Examples of the scenic grandeur of our natural heritage
- B To possess national significance, the area must reflect integrity, i.e, it must present a true, accurate, essentially unspoiled natural example.

#### II. National Parks

#### National parks

A. Should be relatively spacious land and water areas so outstandingly superior in quality and beauty as to make imperative

- their preservation by the federal government for the enjoyment, education and inspiration of all people.
- B Should embrace a sufficiently comprehensive unit as to permit public use and enjoyment and effective management of a continuing representation of its flora and fauna
- C Should be adaptable to a type of management that can provide a wide range of opportunities for human enjoyment, such as camping, picnicking, hiking, horseback riding, sightseeing, in a natural setting consistent with the preservation of the characteristics or features that merited their establishment.
- D. Will most often contain a diversity of resources and values, including scenic and scientific

#### III. Feasibility

The test of feasibility involves weighing all the values and public needs served by the proposal.

The application of the foregoing explicit criteria to the justification for a Redwoods National Park is best set forth in the following statements

". The significance of the redwoods as a part of our heritage justifying preservation does not need arguing, it is accepted Since the turn of the century it has been recognized Time and again it has been reaffirmed by people across the country. Just so, this year, the proposed routing of freeways which threatened some of the redwood state parks brought a statewide and nationwide storm of protest

The net result of . . several factors and trends . . has been a greatly reduced program in terms of acquiring additional acreage of virgin redwood, even important key tracts . Compounding this picture even further are two subtle trends, often little understood or ignored completely. One is the dramatic and continuing increase of park visitor use; the other, a relentless eating away of existing virgin growth in the parks, both in actual acreage and its effectiveness for full public enjoyment and inspiration. The fact is that in a very real sense, there is less in effective acreage 'preserved' today than a decade ago . . . At the same time, remaining opportunities are fast being lost .

The days of old-growth redwood lumber in quantity are numbered . . Remaining virgin growth has dwindled even more drastically Opportunities to set aside complete watersheds still untouched no longer exist except in terms of a few small subdrainages Concentrations of virgin growth having significant park value are now found in only three general locations All of this leads to the most basic conclusions there is an urgent need now, to shore up and consolidate the preservation position in the existing redwood state parks, and to set aside additional acreage of virgin growth. This is judged to be in the national interest, in fact essential, if continuing attrition and encroachments are to be offset, and if opportunity is to be provided for future generations in increasing numbers to see and enjoy these magnificant forests to the full To add bits and pieces here and there will not do the job A major addition is required and, one preferably which would add not merely size, but high quality redwood groves and forests in a situation where, so far as possible, they can be preserved, interpreted, and made available to the public as outstanding examples in an outstanding manner Far too easily the natural heritage we 'preserve' may end up as a watered-down experience seen hastily and superficially from a fast-moving car . "14

The probable economic impact of any proposed national park deserves careful consideration and should be known as accurately as possible. It is, however, not the only factor and not necessarily the determining one. National parks are not established primarily for economic reasons, but, in the words of the act of 1916, "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations" . . . It has been recognized from the beginning that in order to qualify for establishment as a national park an area should be of truly national significance and should constitute an outstanding example of scenery or other features that warrant preservation. Areas possessing these characteristics properly deserve consideration for creation as national parks, with due recognition of the economic and other factors that must be taken into account in reaching a decision Local interests cannot be ignored but may at times have to be subordinated to the national interest. There is much to be said in favor of a major redwood national park. The government of the United States has a clearcut responsibility, which it should have recognized long ago, to participate in the preservation of a national asset of incalculable value.

The reasons for having a Redwood National Park at all indicate the kind of park that should be established. The case for a park is rooted in the nature of the national park system and the expectations that the American people have concerning it. Our national park system is our national gallery of the great natural phenomena of our country The American people rightfully expect to find the best representations of these phenomena in the system The people know that it is worthwhile to come thousands of miles to see what is in a national park. They want the system to be as complete as possible. It is clear that great natural phenomena should have the best possible protection. The legal protection afforded by state parks is often uncertain, at best In California, highway authorities can unilaterally decide to build freeways through state parks, and legislatures can manipulate boundaries to accommodate commercial pressures. The best that nature has to offer should have the full force of the protection of federal law.

"It is beyond dispute that the coastal redwoods of California are among the most impressive of nature's achievements. Clearly they are the kind of phenomena that the national park system has designed to display and protect. As the world's tallest living thing, certainly the best surviving representation of the species should be accorded the best protection available: that of a national park. The establishment of a Redwoods National Park will fill a major niche in the national park system a forest of the world's tallest growing species Since 1911, public officials have recognized that these species belong in the system. Three historical federal studies (in 1920, 1937, and 1964) have recommended inclusions. But Congress has never responded, and today the only redwoods in the system are in Muir Wood Na-

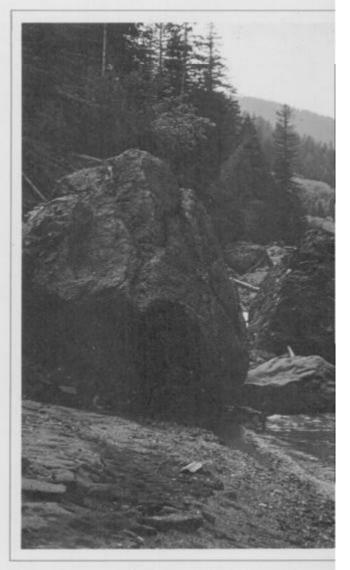
<sup>14 &</sup>quot;The Redwoods," National Park Service, September 1964, pp 36-38

 <sup>36-38
 &</sup>quot;Redwood Parks in Humboldt and Del Norte Counties, Calfornia," Samuel T. Dana and Kenneth B. Pomeroy, American Forestry Association, April 1965, pp 65-67.

tional Monument. But Muir Woods Monument is obviously unable to fill the vacant niche. Although it includes redwoods, it contains only 485 acres, with only 12 acres of flat land and trees which are pigmies compared with those here on the north coast. The redwood unit in the national park system must be a forest which, as nearly as is still possible today, shows the full capacity and variety of the species. For national parks are living museums. The detail of a complete scientific display should be present, as well as the spectacular specimens. Thus an adequate Redwood National Park should contain not only the tallest measured trees, but also the varied habitats characteristic of the species: slopes as well as flats, mixed stands as well as pure stands. stands of mixed age classes as well as even age classes, areas of high elevation as well as low elevation, inland areas as well as coastal areas. areas of light fog and heavy fog, areas with associated flora of drier types and wetter types, areas at the edge of the range as well as at the center. A park with this variety has the capacity to adjust to the changing life cycles and circumstances of individual trees and groves. It will keep faith with those who come thousands of miles: it will be worth seeing. It will keep faith also with other nations of the world who, by treaty, expect us to protect adequate examples of important natural habitats. And it will be worth a major national investment . . . " 16

Where It Should Be Located. In view of the strong justification for creation of a Redwoods National Park, and the growing likelihood that the broad base of support it has received will result in its establishment in the near future, the people of the United States are entitled to the best possible park — not one adding merely size, but the highest possible quality old growth forest, "... where, so far as possible, they can be preserved, interpreted, and made available to the public as outstanding examples in an outstanding manner." 17

The major concomitant consideration in determining the best possible location for the national park must be, of course, its impact on the local economy and the operations of individual companies. It seems very possible, for example, for the government and private industry to work out a cooperative program for coordinated forest management in certain por-

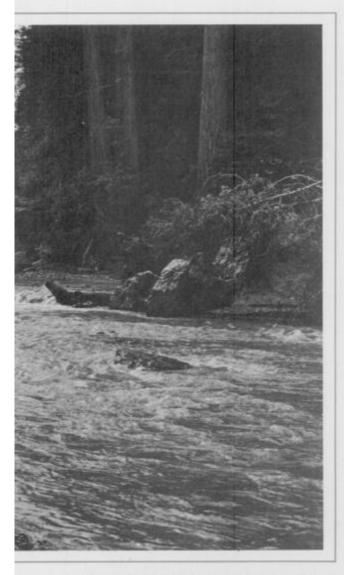


tions of upstream drainages which will enable continuing commercial operations not in conflict with the recreational uses of the national park itself.

As the result of its review of the various alternatives which have been proposed, and bearing in mind the foregoing considerations, it is the feeling of the committee that the best possible federal reserve—and the least long range disruption of the local economy and private operations—would result from creation of a national park in the Redwood Creek-Prairie Creek drainages.

The conclusion that this area is the best remaining opportunity for the creation of a

California Legislature, Assembly Committee on Natural Resources, Planning and Public Works, transcript, July 15, 1966, statement of Dr. Edgar Wayburn, vice president, Sierra Club.
 "The Redwoods," National Park Service, September 1964, pp. 37–38.



national park was made by the National Park Service in its 1964 study, in which it recommended three possible alternatives. It has since been supported by the Sierra Club in enlarged size, and has been introduced into the Congress with substantial support in both houses. It also has the overwhelming support of conservation organizations and news media throughout the state and nation. Subsequent to the publication of its report, the federal government disregarded its own recommendations and proposed a national park in the Mill Creek area of Del Norte County. This proposal is also currently before the Congress.

As outlined previously, a number of other proposals have been advanced for recreational uses of the redwoods, but with the exception of the Regional Redwoods Park Plan, no other alternative proposes the additional acreage of high-quality old growth trees in an ecological unit deserving of national park status. Therefore, the final choice would seem to be between the Mill Creek and Redwood Creek-Prairie Creek areas, and although the committee feels that the determination of the specific acreages necessary and desirable for both recreational and commercial purposes in the area finally agreed upon as a park site is the proper responsibility of the federal government and landowner, it would appear that the following points should receive major consideration in the final decision.

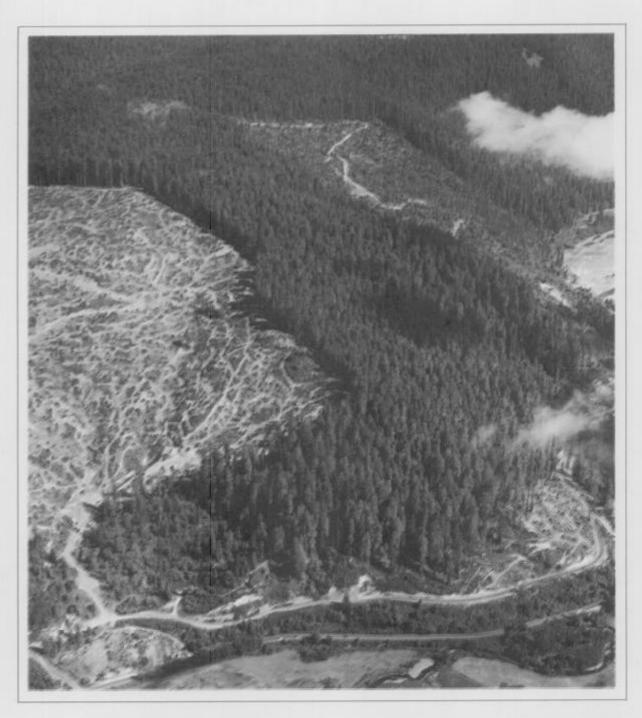
The proposal of the administration envisions the creation of a national park by the joining of Jedediah Smith and Del Norte Coast Redwoods State Parks with a corridor of old and young growth redwoods in the Mill Creek drainage area. While this plan would create a national park of some 44,000 acres, of which some 18,400 acres would be old growth - including the acquisition of 7,800 acres of new virgin trees - no record displays are included, and as cutting proceeds in the remaining virgin watershed, the quality of the proposed acquisition deteriorates as well posing an increasing flood threat to the preserved trees, especially from the Smith River. In addition, the ecological and natural features are relatively limited in scope, and the geography of the area would tend to concentrate visitors in groves along the highway and lower Mill Creek instead of providing an opportunity for dispersal throughout the area. A final consideration is the admittedly severe impact on the local economy which would be produced by putting a major lumber firm out of business in an area in which it is the principal employer. Although the consequences have been thoroughly studied and adequate provisions appear to be included to provide for the interim tax losses and unemployment, the fact remains that creation of the park would be a serious blow to the sparse population and limited economy of an area less able to absorb its impact than other areas within the region.

The Redwood Creek-Prairie Creek area, by contrast, provides far greater opportunities for the creation of a Redwoods National Park which meets fully the expectations of the American people, and the economic impact of which can be much better provided for and absorbed. First of all, it provides a large variety of options for both the preservation and continued commercial utilization of various portions of the watersheds The National Park Service recommended alternatives, for example, ranging from 53,600 acres total (10,330 acre Prairie Creek Redwoods State Park plus 22,580 acres of old growth and 20,690 acres of young growth) to 31,750 acres total (10,330 acre Prairie Creek Redwoods State Park plus 11,970 acres of old growth and 9,450 acres of young growth) (See Appendix, page 48). The Sierra Club proposal extends the total to some 90,000 acres, and includes some 30,000 acres of new virgin growth

Therefore, it is clear from the large number of alternatives which have been advanced that there should be ample opportunity to develop a compromise which will both preserve adequate old growth redwoods and also permit commercial operations on a reduced scale. Because of the virgin or relatively well-managed state of much of the watershed, the final plan should be well able to provide protection of downstream areas from erosion and flooding **Second**, the drainages provide the largest remaining uncut block of virgin growth not preserved, and in the opinion of the Park Service certainly the most significant large block in terms of park values Lower Redwood Creek. for example, is essentially uncut from ridge to ridge, and presents an outstanding redwood valley picture, much still unacessible except by foot Third, the area provides by far the greatest variety of ecological and natural features and consequent opportunities for the varied recreational experiences to be expected in a national park. It contains, for example, the world's tallest livings things in the superlative redwoods growing along Redwood Creek, and because of the primitive character of much of the forest, it holds the most likely possibilities for the discovery of even taller record trees, the world's best example of redwood slope-type trees and associated species up to an elevation of 2,000 feet; the world's largest mountain covered with redwoods; exceptional views of Redwood Creek Valley from Bald Hills Road, of the Gold Bluffs and Gold Bluffs Beach, and of Elk Prairie; 18 miles of coastline - much remaining in a wild state, 22 miles of river frontage along Redwood Creek — usable for float trips during part of the year, herds of wild elk,

Fern Canyon, waterfalls, waterfowl areas, Klamath River fishing; and Indian artifact areas. Fourth, the geography and varied attractions of the park provide ample opportunities for visitor dispersal throughout the area Fifth, while the extent of impact on commercial operations is subject to the final plan for a park, it can be much better absorbed within the broader economy of the area, especially with the provisions for mitigating the interim tax loss and any increased unemployment which would be included in the enabling legislation. Under this plan, the holdings of three major companies will be affected to a greater or lesser extent, but could result in the possible suspension of future operations by only one of them Full cash compensation will of course be paid for the lands acquired, and therefore neither the company or its stockholders should suffer actual financial losses. On the assumption that the total operation of only one company is ultimately affected, one estimate is that a total of 600 persons would be directly or indirectly displaced, which would amount to only 1.5 percent of the Humboldt County work force — a percentage well within the normal fluctuating unemployment rate In the long run, however, there seems to be a little doubt that the economic cost in terms of capital investment and temporary unemployment will be more than offset by the increase in economic activity accompanying the national park visitation Finally, as in the Mill Creek area, there is an urgency that the final decision be made as soon as possible It is not economically feasible to restrict indefinitely the logging of areas under consideration, and the more they are logged in the absence of an overall plan related to recreational uses, the less will be the value of the park ultimately created

In summary, the committee feels that the best location for a Redwoods National Park is in the Redwood Creek-Prairie Creek area; that efforts should be made to achieve a balance in cooperative watershed management and public acquisitions which will maximize both the recreational and commercial uses of the area, consistent, however, with the purposes of a national park; and that appropriate provisions be made to offset the impact of the establishment of a park on the local economy.



### . . . Concerning the North Coast Redwoods Master Plan

In view of the need to maximize the preservation and utilization of existing state parks, the committee recommends that the state should proceed as rapidly as possible to acquire those designated old growth trees previously indicated as necessary to round out and protect existing preserved stands.

# . . . Concerning the Redwoods and the Economy of the North Coast

As outlined previously in considerable detail, the conflicting data — and interpretations of data — make impossible conclusive answers to the basic questions posed initially by the committee concerning the ecological, commercial, and recreational future of the coast redwood forest. This lack of answers is particu-

larly disturbing to the committee, because although the redwood lumber industry has dominated the economy of northwestern California for a century, the fluctuating character of its health coupled with such factors as the chronically high unemployment rate, the slow population and economic growth, the numerous gloomy forecasts of future decline in the timber industry, and the apparent inability of other activities such as fishing, agriculture, or manufacturing to provide alternative growth possibilities, indicates that serious times may be ahead for the entire region — the effects of which will be felt throughout California - unless imaginative and effective steps are taken soon to stimulate regional economic growth

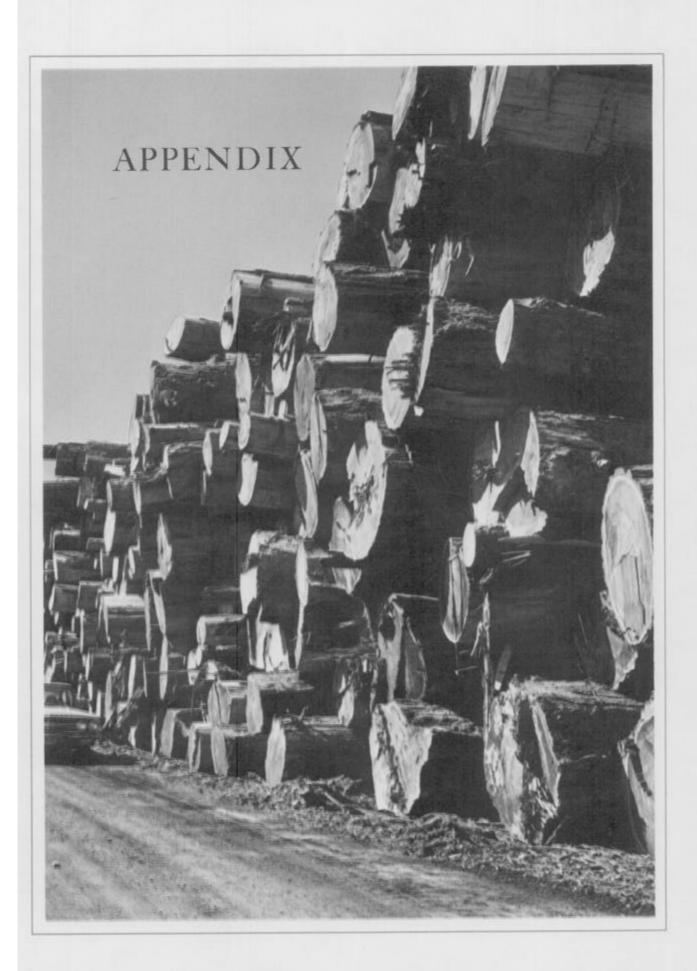
Therefore, the committee recommends that (1) a comprehensive assessment be made of the short and long range economic future of the entire north coast region, supported by statistics and other information relative to the ecological, recreational, and commercial future of the redwoods—and other regional resources—which is generally acceptable to all affected interests, and (2) a regional master plan be formulated for the optimum, balanced, long-range development of the entire region.

The committee feels that such an assessment and regional plan should be prepared by a broadly based study commission—designated the "California North Coast Regional Study Commission"—created by the Legislature, with a membership representing the spectrum of interested public and private groups. Adequate financial resources should be made available to the commission to retain expert consultation and provide for data gathering and interpretation. The commission should submit its report, regional plan, and recommendations for implementation to the 1970 Legislature.

The commission should include, but is not limited to, the following matters in its study objectives:

1. The short and long range contribution which each of the following activities —

- given optimum specified conditions can make to the regional economy lumber and wood products, recreation, fishing, agriculture, manufacturing, and food processing.
- 2 Other activities and the conditions necessary for their stimulation—which can make a significant contribution to a more diversified regional economy;
- 3 The degree to which sustained productivity of redwoods and associated commercial species is actually being achieved on a regional and major landowner basis, and the minimum acreage and location of old growth redwoods considered essential to achieving the transition from an old to young growth economy at a specified level of activity and product output,
- 4 The relationship of timber and land taxation policies to the lumber and wood products industries, the local economy, and land use,
- 5 The impact upon and most effective contribution which can be made to — regional resources utilization and the regional economy, by the following:
  - a. Redwoods National Park Mill Creek proposal
  - b Redwoods National Park. various Redwood Creek-Prairie Creek proposals
  - c Redwood Park and Recreation Plan
  - d Redwood Regional Park Plan
  - e State North Coast Redwood Master Plan
  - f Pacific Redwood National Park and Seashore Plan
  - g. National Redwood Park, Recreation, and Seashore Plan
  - h. National California Coastal Scenic Redwood Road and Trails System
  - i California Fish and Wildlife Plan
  - j California State-Federal Interagency Water Resources Development Plan (State Department of Water Resources, U.S. Bureau of Reclamation, U.S. Army Corps of Engineers, U.S. Soil Conservation Service)
  - k. Other major public works and resources development plans



- Witnesses Appearing Before the Committee or Submitting Statements
- Mr. Hugo Fisher, Administrator of Resources, State of California
- Mr. Fred L. Jones, Director, California Department of Parks and Recreation (State North Coast Redwoods Master Plan)
- Mr. Leo J. Diederich, Assistant to the Regional Director, U.S National Park Service (proposed Redwoods National Park. Mill Creek)
- Mr. J. Michael McCloskey, Conservation Director, Sierra Club (proposed Redwoods National Park Redwood Creek-Prairie Creek)
- Mr. Don Cave, Cochairman, Redwood Park and Recreation Committee (Redwood Park and Recreation Plan)
- Mr. Deane B. Mather, Private Forest Land Manager, and Dr. Rudolf W. Becking, Forest Research Consultant (Redwood Regional Park Plan)
- Mr. George L. Collins, Vice President, Conservation Associates (Pacific Redwood National Park and Seashore Plan, National California Coastal Scenic Redwood Road and Trails System)
- Honorable Don H. Clausen, Congressman, First District, California (National Redwood Park, Recreation, and Seashore Plan)
- Mr. Philip T. Farnsworth, Executive Vice President, California Redwood Association
- Dr. Richard A. Siegel, Chief, Economic Planning Section, California State Office of Planning ("The North Coast Forest Products Industry in 1975")
- Mr. Francis H. Raymond, California State Forester, Chief, State Division of Forestry, Executive Secretary, State Board of Forestry
- Dr. H. DeWayne Kreager, Consulting Industrial Economist, Seattle, Washington ("Economic Factors Relating to Redwood Park Proposals an evaluation of the impact of proposed additions to California redwood parks on the economy of Humboldt and Del Norte Counties")
- Mr. John G. Miles, Consulting Forester, Eureka, California ("The Effect of Commercial Operations on the Future of the Coast Redwood Forest", "Outdoor Recreation and Redwood Parks")
- Mr. Newton B. Drury, Secretary, Save-the-Redwoods League
- Honorable Randolph Collier, State Senator, Siskiyou and Del Norte Counties Honorable Carl L. Christensen, State Senator, Humboldt County
- Mr. Fred Landenberger, Secretary-Treasurer and Manager, North Coast Timber Association
- Mr. Gordon P. Robinson, Consulting Forester, formerly Forester, Southern Pacific Company
- Mr. Charles A. Connaughton, Regional Forester, U.S Forest Service
- Mr. John Callaghan, Secretary-Manager, California Forest Protective Association
- Dr. George H. Allen, Fishery Research Consultant, and Dr. Rudolf W. Becking, Forest Research Consultant ("Some Relationships Between Redwood Parks and the Humboldt County Economy")
- Mr. Ray Hunter, Director of Natural Resources, California Farm Bureau Federation

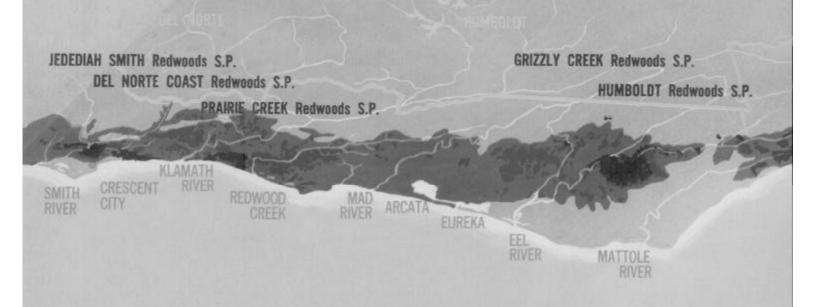
- Honorable John Mayfield, Jr., Member, Board of Supervisors, County of Mendocino
- Mr. Robert N. Colwell, chairman, Northern California Section, Society of American Foresters
- Mr. Darrell H. Schroeder, Vice President and General Manager, Miller Redwood Company and Rellim Redwood Company, Crescent City
- Mr. Henry K. Trobitz, Manager, California Timberlands Division, Simpson Timber Company
- Mr. Frank N. Blagen, Resident Manager, and Mr. Alfred H. Merrill, Chief Forester, Georgia-Pacific Corporation
- Mr. Eugene Hofsted, Chief Forester, Arcata Redwood Company
- Mr. Larry McCollum, Chief Forester, Pacific Lumber Company, Scotia
- Mr. Robert Grundman, Chief Forester, Union Lumber Company, Fort Bragg
- Mr. D. W. Cooper, Farm Adviser, Humboldt Agricultural Extension Service, University of California ("Coast Redwood and Its Ecology: a summary of observations and studies on the ecology and growth of the coast redwood")
- Dr. Everett Watkins, chairman, Redwood National Park Committee, California Wildlife Federation
- Dr. Kurt Munchheimer, Councilman, City of Rio Dell
- Mr. Richard F. Denbo, Manager, Greater Eureka Chamber of Commerce
- Mrs. Kay Chaffey, Citizens for a Redwood National Park
- Mrs. James S. Hughes, Secretary, Federation of Western Outdoor Clubs
- Mrs. Mary Lou Comstock, Master, Orick Valley Grange No. 508
- Dr. Edward E. Sturgeon, Coordinator, Forestry Department, Humboldt State College; Administrative-Technical Representative, McIntire-Stennis Forest Research Program

### Additional Sources of Information

- "The Redwoods," September 1964, A Professional Report Prepared by the National Park Service, United States Department of the Interior
- "Redwood Parks in Humboldt and Del Norte Counties, California," April 1965, Dr. Samuel T. Dana, Dean Emeritus, School of Natural Resources, University of Michigan, and Kenneth B. Pomeroy, Chief Forester, American Forestry Association
- "The Last Redwoods," 1963, Philip Hyde and Francois Leydet, Sierra Club Exhibit Format Series
- "The Vanishing Redwoods," Audubon Magazine, November-December 1965
- "A Redwood National Park in the Making," Sunset Magazine, March 1966
- "The Redwood Pot Begins to Boil," American Forests, January 1966
- "A Redwood National Park," National Parks Magazine, February 1965
- "The Great Redwoods Controversy," Reader's Digest, December 1966
- "Economic Development Prospects for the Commercial Forest Resources and Forest Products Industries of California," October 1963, John A. Zivnuska, Paul Cox, Adon Poli, and David Pesonen

## THE REDWOOD FOREST

The primeval Coast Redwood Forest (Sequoia sempervirens) which ex upon the arrival of the first Californians originally occupied some 1,500 to 2,000,000 acres—depending upon definition—of the central and nort California coast. It was confined to a narrow band generally not over 25 i wide in the fog belt from the San Luis Obispo County line north for 500 i to just across the northern California border.



ne original primeval, or "old growth," forest there remains today some 00 to 300,000 acres—depending upon definition—of which approximately 0 acres are protected within a number of separate units of the State Park

e "Big Trees" (Sequoia gigantea) remaining under public protection are ned to scattered remnants in the Sierra Nevada Mountains, mostly in units e National and State park systems.

> H. W. COWELL Redwoods S.P. BIG BASIN Redwoods S.P. MONTEREY SAN MATEO SAN FRANCISCO

ARMSTRONG Redwoods S.P.

MAILLIARD Redwoods S.P.

FORT

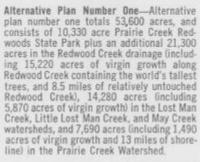
MENDOCINO

REMAINING VIRGIN GROWTH

ORIGINAL RANGE OF COAST REDWOODS

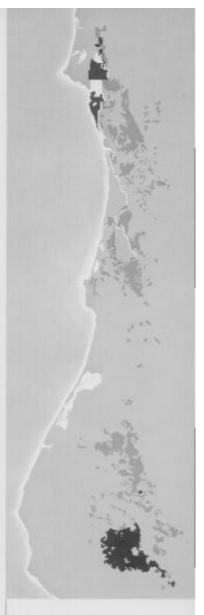
EXISTING PROTECTED REDWOOD GROVES







Alternative Plan Number Two—Alternative plan number two totals 39,320 acres and is identical to Alternative Plan Number One, with the exclusion of the 14,280 acres in Lost Man Creek, Little Lost Man Creek, and May Creek watersheds. The reduced size of this alternative would require a distinct separation of the Redwood Creek and Prairie Creek portions of the overall park, and would remove three small but nearly complete virgin watersheds.

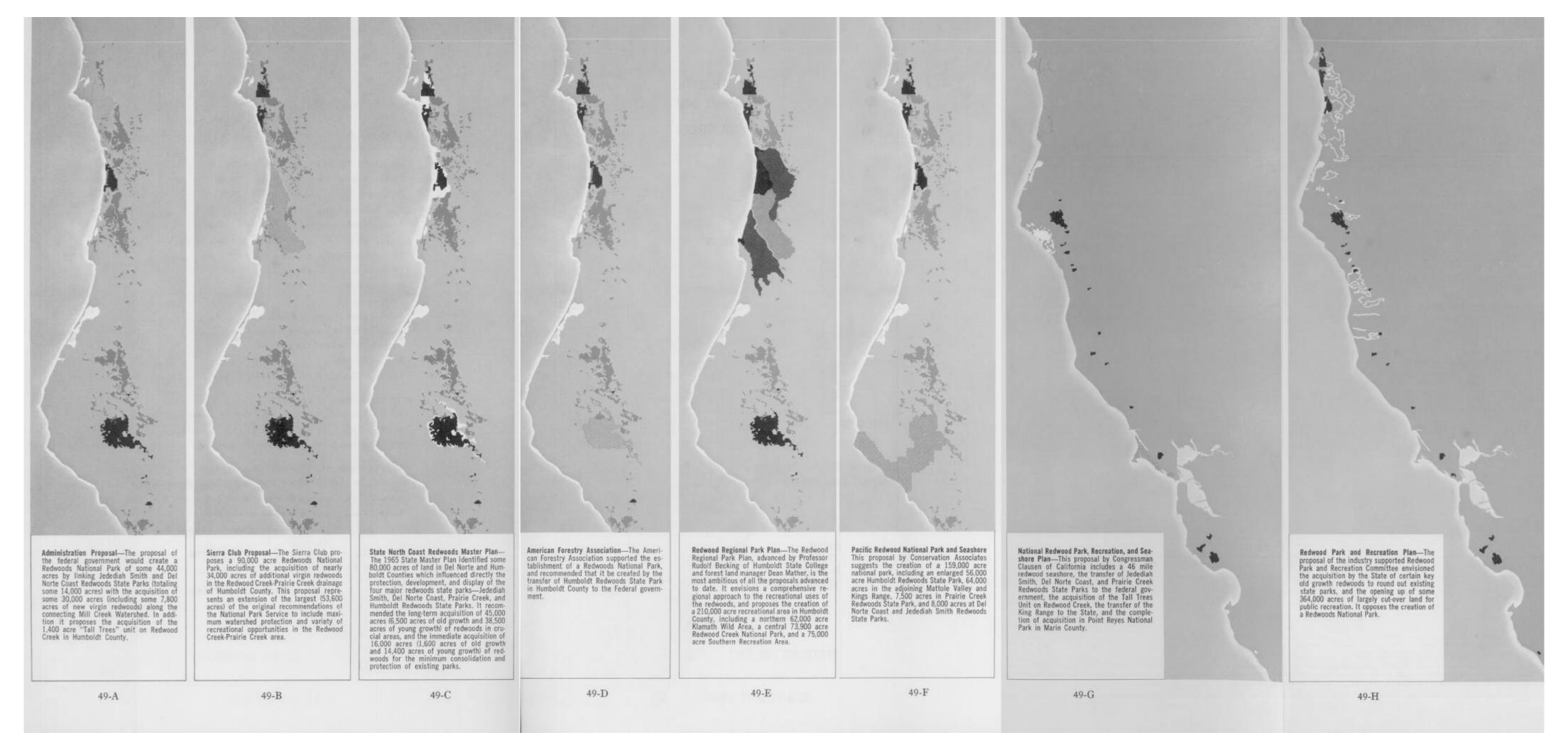


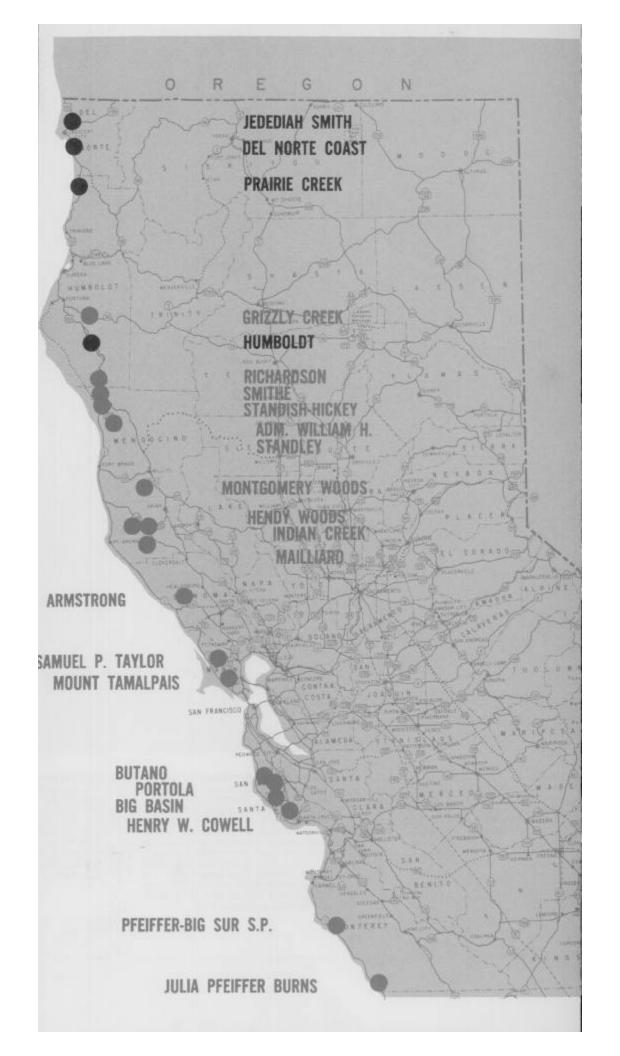
Alternative Plan Number Three—Alternation number three totals 31,750 acres, is identical to Alternative Plan Number with the reduction of the major new 21, acre addition in the Redwood Creek Washed to some 10,480 acres by the exclusion much of the upper drainage area. I reduction would materially lessen the elogical integrity and protection from eros of the smaller watersheds and the tall trunit, but would retain much of the outstaing valley setting of uncut redwoods firidge to ridge in Redwood Creek.

48-A 48-B 48-C

### Redwoods National Park - Proposed National Park Service Alternatives

The September 1964 study of the National Park Service strongly recommended the creation of a Redwoods National Park, and proposed three alternatives—all within the Redwood Creek-Prairie Creek area—as representing the best remaining opportunity for meeting fully the comprehensive criteria for recreational opportunities within a national park. These three alternatives total 53,600, 39,320, and 31,750 acres respectively, and each would add a major unit of uncut old growth trees. Each alternative would include Prairie Creek Redwoods State Park.





### Photographs Courtesy of

SIERRA CLUB	Pa	90
Humboldt Redwoods State Park	Cover	(Right)
Logging near Prairie Creek Redwoods State Park	Cover	(Left)
Near the Klamath River	1	(Top)
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Written by O. James Pardau

### ASSEMBLY INTERIM COMMITTEE REPORTS

Volume 26, Number 16

1965-1967

# NEW HORIZONS IN CALIFORNIA WATER DEVELOPMENT

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### ASSEMBLY OF THE STATE OF CALIFORNIA

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HON GEORGE ZENOVICH
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HON CARLOS BEE Speaker pro Tempore HON ROBERT T. MONAGAN Minority Floor Leader

JAMES D. DRISCOLL Chief Clerk December 1966



Honorable Jesse M. Unruh Speaker of the Assembly Members of the Assembly State Capitol Sacramento, California 95814

### Gentlemen:

In accordance with the provisions of House Resolution No 710 of the 1965 Regular Session, the Assembly Interim Committee on Water herewith submits a record of committee activities and its report entitled New Horizons in California Water Development This single report includes the Committee's studies on waste water reclamation, saline conversion, and water quality control

These are frontier areas of water resources development and management in California Major new efforts in each of these areas by the State and local agencies can provide California with additional means of utilizing, to the maximum extent possible, our existing water supplies.

Increased emphasis on the prudent stewardship and "stretching" of existing water supplies in our fast growing state should be of first priority during the coming years

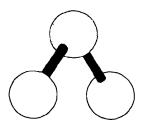
Legislation implementing the Committee's recommendations on these subjects is found in the Appendix of this Report.

### Respectfully yours,

### CARLEY V PORTER Chairman

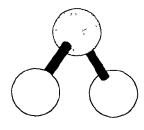
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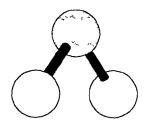
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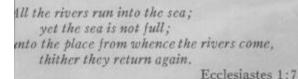


New Horizons in California Water Development





New Horizons in California Water Development





Earth and water, if not too blatantly abused, can be made to produce again and again for the benefit of all mankind. The key is wise stewardship . . . Today we view both earth and water as "renewable" resources. Given thought and consideration and care, they can be made to serve man indefinitely—at least unless man by sheer weight of numbers overruns the boundaries of even that flexible term—renewable.

U. S. Department of the Interior

### Introduction

In previous years this Committee has reported on Sea Water Conversion,¹ and Water Quality.² During the current interim the Committee has continued its studies in these areas and added another important one, waste water reclamation. These three closely related fields—waste water reclamation, sea water conversion and water quality control—constitute important "new horizons in California water development."

<sup>a</sup> See the following Assembly Interim Committee Report: Reports of Subcommittee on Water Pollution, Vol. 26, No. 11 (1963-65).

See the following Assembly Interim Committee Reports: Report of Subcommittee on Water Project Uses for Atomic Power, Vol. 13, No. 16 (1955-57); Power for Water, Vol. 13, No. 27 (1957-59); Report of Subcommittee on Saline Conversion and Nuclear Energy, Vol. 26, No. 3 (1959-61); Saline Conversion and Nuclear Energy, Vol. 26, No. 7 (1961-63); Saline Conversion and Nuclear Energy, Vol. 26, No. 12 (1963-65). For convenience, in this Report the term "Sea Water Conversion" is used interchangeably with "Saline Conversion." As used in the report the term includes sea water (35,000 ppm salt) and other saline and "brackish waters" (down to about 1800 ppm salt).

Each represents an important means of making the most of existing water supplies available in our State.

Before beginning a discussion of each of these important concepts in detail, including recommended legislation, it is appropriate that the Committee briefly place in perspective California's need for maximum utilization of existing water supplies A recent article in a national magazine summarized the extent to which water is available to us and described how, because of nature's hydrologic cycle, our Nation's available water supply remains constant in quantity in spite of advances in water science and technology.

Man's current concern over water reflects a serious, worldwide shortage in the midst of plenty For while it is a fact of nature that water swamps nearly three-fourths of the earth's surface, it is also an ironic truth that it cannot always be found where it is needed, when it is needed, in the amounts that are required Of the 326,071,000 cubic miles of water on earth, 97.2% is in the oceans, unfit to drink, too salty for irrigation. Another 2% lies frozen and useless in glaciers and icecaps The tiny useable fraction is neither evenly distributed nor properly used.

The earth has exactly as much water now as it ever had. No less, but no more Unlike any other resource, the 326 million cubic miles of water are not used up. In nature's familiar, never-ending cycle, water falls to earth as precipitation, seeps underground, flows into lakes and streams and rushes toward the oceans. Sooner or later it evaporates back through the air or is given up by plants in the process of transpiration. In time the water returns to the earth again in the form of rain and snow.<sup>3</sup>

In 1964, the 17 Western States had a population of 49 million, more than a third of whom were in California In 1980, the population of these states will leap to 70 million, by the year 2000 it will more than double, reaching 108 million During this time, the need for water in this area will increase from 218 billion gallons per day to 365 billion gallons per day.

A few statistics on the average use of water for various purposes will point out the magnitude of water use in California and the rest of the Nation today. Merely flushing a toilet requires 3 gallons of water while a tub bath utilizes up to 30 to 40 gallons and a shower from 20 to 30 gallons. To wash the family dishes requires almost 10 gallons of water and one load in a washing machine requires from 20 to 30 gallons.<sup>4</sup>

Similarly, statistics on industrial use of water point up the magnitude of the nation's water needs. Ninety percent of the 125 billions of gallons a day used by industry is for cooling. It requires 25 gallons of water to make a gallon of beer Steel mills can require up to 75,000 gallons to make one ton of steel, while paper mills utilize 188,000 gallons of water per ton of newsprint. A petroleum cracking plant may take up to 10 tons of water to turn out a gallon of gas, while processing of a ton of aluminum requires 5,000 gallons of water

The impact of our burgeoning population as reflected in rapidly increasing water requirements has been recognized consistently by California State Government and the people of California. In 1960, the State approved the largest bond issue in the history of any State to transport annually more than 4 million acre feet of surplus Northern California water to Central and Southern California to supplement existing local and imported water supplies. In addition, for more than a half century, local and regional districts and municipalities have gone hundreds of miles to distant sources to provide the water supplies upon which the great metropolitan areas of our State have developed and flourished.<sup>5</sup>

Regulation Explosion

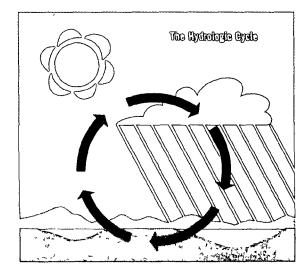
Jame, October 11, 1965, page 58

Luna B Leopold and Walter B Lengbein, A Primer on Water, United States Department of the Interior Geo-

begical Survey, Washington, D.C., 1960
For an excellent discussion of these efforts see Michael F. Brewer and Stephen C. Smith, California's Man-Made Rivers, University of California, Berkeley, California, 1961

However, the experts who have testified before this Committee have made it clear that export projects and major water development projects, while essential, should not be expected to handle California's water problems *alone*. Our State presents a panoply of water solutions The importance of accelerating all forms of water development to meet California's needs was recognized recently in one of the Nation's leading magazines:

"However California works out its water problems, the rest of the U S will be watching with interest For in that one state, the problems of the entire country, to say nothing of the rest of the world, are mirrored in microcosim. From the dry south to the rainy north, Californians must continually cope with drought and flood, poor drainage and sporadic runoff of mountain streams, diminishing ground water and



seepage from the sea, pollution and landslides at dam sites. The northernmost one-third of the state contains 70% of the water, while 77% of the water need is in the southern two-thirds—the southern cities and farms must import more than 5,000,000 acre feet of water each year from the Colorado River Faced with such diverse and disparate conditions, California has learned the necessity of looking ahead, is now preparing for its water years in the year 2020—when it is estimated that half of the projected population of 57 million will live in the dry south."

In answering the question, "Has the United States enough water?", the United States Geological Survey sets forth the challenge facing California today:

"Prudence requires that the nation learn to manage its water supplies boldly, and imaginatively and with utmost efficiency. Time in which to develop such confidence is all too short. The United States can be assured of sufficient water of acceptable quality for essential needs within the early foreseeable future, provided that it 1) informs itself, much more searchingly than it has thus far, in preparation for the decisions that can lead to prudent and rational management of all its natural water supplies, 2) is not deluded into expecting a simple panacea for water supply stringencies that are emerging, 3) finds courage for compromise among potentially competitive uses for water, and 4) accepts and can absorb a considerable cost for new water management works, of which a substantial part will need be bold in scale and novel in purpose."

It is with a recognition of this challenge that the Committee presents in this report its views on three major problem areas of water management, each of which represents another step in the continuing process of developing greater water supplies from available resources—sea water conversion, tapping the immense quantities of sea waters available to California utilizing nuclear energy as a power source; waste water reclamation, the renovation and reuse of potentially significant quantities of sewage and industrial waste which is available throughout the State, and water quality control, the protection of all the waters of the State for beneficial use by prompt and efficient regulation of discharges of sewage and industrial waste

For the purposes of its study of Waste Water Reclamation and Sea Water Conversion and nuclear energy, Chairman Porter appointed a Subcommittee consisting of Mr Porter, Chairman, and Assemblymen Ashcraft, Chappie, Dannemeyer, Flournoy, Henson, Ray Johnson and Williamson, members The Subcommittee held meetings as follows

December 6, 1965
December 8, 1965
San Diego
Waste Water Reclamation and Reuse
Field Trip
Sea Water Conversion and Nuclear
Energy
September 29, 1966
Fresno
Executive Session

<sup>\*</sup> Time, October 11, 1965, page 69

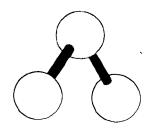
A. M. Piper, Has the United States Enough Water?,
U.S. Geological Survey, Water Supply Paper 1797, U.S.
Government Printing Office, Washington, D.C., pages 1
and 22 (emphasis added)

Testimony was received from a wide range of public and private agencies involved in sea water conversion and waste water reclamation. Mr. Frank C Diluzio, head of the U S. Office of Saline Water, testified before the Committee on federal developments at its Los Angeles meeting in January, 1966.

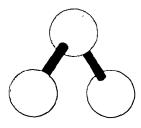
Chairman Porter assigned the subject of Water Quality Control to the full Committee. Hearings were held throughout the State on this subject as follows:

October 26–27, 1965	Sacramento	Proposals to reorganize State Water Quality Control Board (Hoover Commission Recommendation)
July 21, 1966	Bijou	Lake Tahoe pollution
July 22, 1966	Bijou	Proposed changes in State Water Quality Control Law
November 16, 1966	San Francisco	Proposed changes in State Water Quality Control Law
November 17, 1966	San Francisco	Staff Proposal—"A Water Resources Control Board for California"
December 13, 1966	San Diego	Executive Session

The Committee wishes to express its appreciation to the Committee Staff, the Office of the Legislative Analyst and the Legislative Counsel, for their assistance.







New Horizons in California Water Development

ater reuse can be very important. We will be conserving water would otherwise be lost We will be minimizing the need for and extraordinarily costly new water importation plans aste water purification is not only a source of usable water but a major step in the control of water pollution

Donald Hornig, White House Science Advisor

### Waste Water Reclamation I The Problem

The Introduction to this Report has indicated the need for careful management and control of existing water supplies in order to meet the explosive population growth of California and the West This section of the Report will discuss the reclamation of waters from sewage and industrial wastes for beneficial use Since our population, our industry and our agriculture are expanding while our basic water supply remains constant, it is uniformly agreed that we must reuse at least part of our water supplies before they finally reach the sea In the words of one observer, "We will have to accept the fact that much of the water we drink, launder our clothes in, wash our dishes in, or swim in has gone through other homes and factories before reaching our water systems "1

Although planned reuse on a large scale is relatively new, water reuse, in fact, has been common in the United States for years For example, the waters of a large industrial river, such as the Ohio, are reused perhaps a dozen times before it reaches its rendevous with the Mississippi Our own Sacramento River, on a smaller scale, is analogous to the Mississippi, the Ohio, the Missouri and other great rivers of the United States in which the cycle of use, discharge into the stream, and reuse by downstream users is commonplace

In the words of one writer, the question "Who would want to drink reclaimed sewage water?" is a foolish question since millions of people have been doing so to some degree for years.2 It has become increasingly clear to this Committee in its investigation that more sophisticated reuse of water must be undertaken in California if we are to truly maximize our existing water resources. As the Director of Water Resources has indicated:

Efficient use of the State's available water resources must include reclamation and reuse of waste waters Effluents from municipal waste treatment plants already serve as supplemental water supplies in some water-deficient areas of the State These supplies are used for irrigation of certain crops as well as for public parks and golf courses, for development of recreational lakes, and for replenishment of ground water basins

I think that the time has come in the field of water resources development to think in terms of comprehensive systems of water management, systems in which reclaimed water can have an important role We are already beyond the simple concept of projects which carry water from a single source to a single point of distribution. The need is developing for much more sophisticated projects by means of which water from different surface and ground water sources can be blended with desalinized water or with reclaimed water at various points within the system to produce economically water of predetermined desirable quality

I am certain you can recognize our firm belief that reclamation and reuse of waste water must be considered as an integral part of any plan or system devised to meet the demands for water in the various parts of California;

Donald Carr, 'Death of the Sweet Water," Atlantic,

May, 1966, page 93

<sup>2</sup> John Bird, "Our Dying Waters," Naturday Evening Post, April 23, 1966, page 100

<sup>3</sup> Transcript, Hearing, December 6, 1965, pages 3-4

The Department of Water Resources prepared for the Committee a comprehensive list of all known and potential waste water reclamation activities in California.<sup>4</sup> This information indicated that waste water reclamation, in one form or another, is appropriate in every area of California, from the mountains of the North to the deserts of the South.

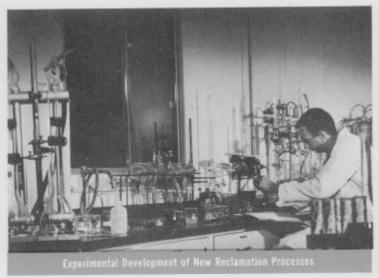
The principal direct use to be made of reclaimed waters initially would appear to be irrigation. The second most important use, in view of the outstanding experiences at several projects already developed in California, is for recreation. Probably no area in the Nation has as great a need for additional water based recreation as California, and particularly Southern California, where the State's greatest population growth has occurred. Reclamation of water from waste is recognized as part of the California Water Plan and should be actively planned for and developed where economically feasible by local water distributing agencies.

### California Experience

The experience of California to date in several waste water reclamation projects has set the standard for the rest of the Nation to follow.

Although sea water conversion requires the presence nearby of the ocean, every community in the State has sewage and industrial wastes, many of which are physically capable of reclamation. Thus the potential use of waste water reclamation is widespread.





### Santee County Water District

The Santee County Water District serves the community of Santee in suburban San Diego and provides sewage service and water service to the community. In 1959, the District, in the words of its Manager, "undertook a pioneering project under which the District proposed to put together a series of treatment techniques which we believe would return the water to a level of quality which could be safely reused". Thus, the District would solve its waste disposal problem and at the same time use the same dollars to turn a former liability into an asset—useful water. In view of the concern of public health agencies and others over such a radical departure of waste water reclamation from existing activities, the District embarked upon a program to make their project a study and research program to answer many critical questions of waste water reclamation. Each step of the way the project met technical standards imposed by federal, state and local health officials and the Regional Water Quality Control Board. It has the enthusiastic support of the U. S. Public Health Service.

See Appendix to Transcript, op. cit. for complete data.
For discussion of recreation deficiencies in Southern California see Statement of Department of Parks and Recreation to Senate Fact Finding Committee on Water Resources, September 22, 1966.

<sup>&</sup>quot;Transcript, op. cit., pages 70-71.

The District developed a series of small lakes filled with effluent first treated by the primary and secondary stage treatment plant and percolated underground for a short distance. In 1961, the District opened one of the lakes for limited recreational use without body contact. Later, approval of picnicking and boating and a "fish-for-fun" program were instituted. In June, 1964, fishermen utilizing the recreation lake were permitted to keep their catches for the first time. Finally, in June, 1965, a controlled swimming program began in water which a few weeks before had been municipal waste.

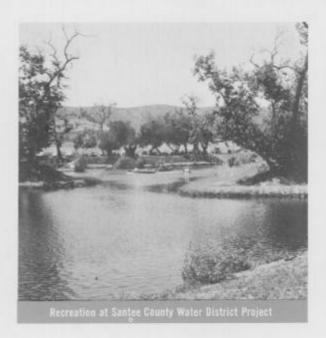
The response to the project was unprecedented. As explained by the Manager of the District "many of the children and adults who swam last summer waited as long as three hours to get admission to the pool. In addition to the limited number who could participate in the swimming program, approximately 75,000 persons enjoyed the recreational opportunities afforded by the park complex during the one year period from October, 1964, to October, 1965."

The District Manager went on to summarize the accomplishments of the project.

The Santee Waste Water Reclamation Program is meeting the waste disposal needs of the Santee Community. It has turned an unsightly and useless gravel pit into a beautiful and valuable recreation area. It has made possible the establishment of a beautiful golf course which could not exist in our community if it were not for the availability of the reclaimed water. All of this has been accomplished for approximately the same cost that the community would have incurred had the community elected to dispose of its waste water into the ocean about 20 miles away.<sup>7</sup>

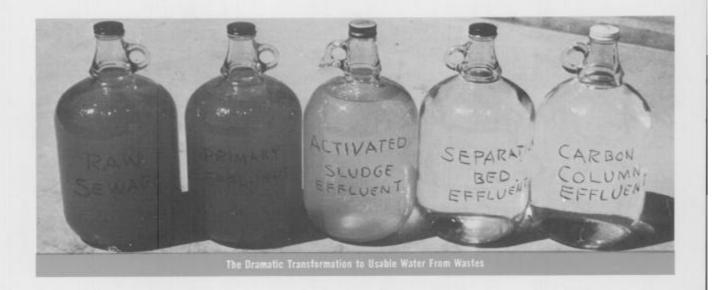
According to the District, the current research program has achieved its objectives and is now virtually complete. In addition to development of the initial project in 1965, the voters of the District, by a majority of 80%, approved a \$2.3 million general obligation bond issue to modify and expand the project to a capacity of four million gallons per day. Also authorized was the construction of a separate distribution system to enable the District to deliver reclaimed water to volume consumers for resale. The District points with pride to the fact that the availability of reclaimed water will also facilitate implementation of the expansion of the greenbelt concept for the community of Santee by making irrigation water available to maintain parks and open space areas.

The experience of the Santee District has been recognized in dozens of national magazines and scientific journals as one of the outstanding accomplishments to date in waste water reclamation.









### Los Angeles County Sanitation Districts

The Los Angeles County Sanitation Districts have also pioneered the field of waste water reclamation. As early as 1949, the Districts joined with the county engineer and the Los Angeles County Flood Control District in a report which advocated the use of several existing sewage treatment plants as waste water reclamation facilities. The sanitation districts sewerage system serves more than  $3\frac{1}{2}$  million people in 70 incorporated cities and a large unincorporated area of Los Angeles County.

Following a report released in 1958 four separate agencies of government entered into a joint exercise of powers agreement for the construction and operation of the Whittier Narrows Water Reclamation plant, with a capacity of 12 million gallons per day. The project is a fine example of local interagency cooperation. The project was financed by an advance from the County of Los Angeles of \$1.7 million. Design and construction responsibility was assumed by the Sanitation Districts. The reclaimed water is delivered to the County Flood Control District which is responsible for its conveyance and circulation into the ground at spreading basins located on the Rio Hondo and San Gabriel Rivers. The Central and West Basin Water Replenishment District purchases all of the water from the plant at a price equal to that which it would pay for untreated Colorado River water served from the Metropolitan Water District. Funds for this purchase are raised by the district's levy of a pump tax.<sup>8</sup>

After percolating into the underground the reclaimed water is repumped by water users downstream and reused along with the natural underground supply of the basin. Following the success of the Whittier Narrows Project the Sanitation Districts released a comprehensive report in July, 1963, which recommended that of the 285 million gallons of water which are discharged daily to the ocean from the district's facilities, approximately 100 million gallons (or more than \(\frac{1}{2}\)) are suitable for reclamation and reuse by treatment similar to that at the Whittier Narrows Plant. At the time of issuance of the report the estimated cost of the facilities recommended was \$20 million and called for construction of five new water reclamation plants and the enlargement of three existing plants. The cost of water developed by plants included in the proposal would range from \$6.83 per acre foot to \$17.75 per acre foot.

In addition to the sewage and wastes treated by the Sanitation Districts, the City of Los Angeles estimates that 200,000,000 gallons of the 300,000,000 gallon daily flow from its separate systems can be chemically treated for reclamation. Thus, the City of Los Angeles and the County Sanitation Districts together could reclaim approximately 25% of the initial water supply available to their areas (about 1.2 million acre feet annually). Although waste water reclamation activities in the Los Angeles Basin cannot supply the entire future needs of the area, the district is enthusiastically working on reclamation, as indicated by the District's Chief Engineer.

<sup>\*</sup> A Plan for Water Reuse, Los Angeles County Sanitation Districts, July, 1963.

Some of the advantages of reusing waste water is that they occur near the centers of population and at appreciably higher elevations than, of course, the sea water. Also, the waste water contains substantially less dissolved solids than, of course, the sea water. Most waste waters will be under 1000 parts per million; salt water, on the other hand, would be about 35,000 parts per million, so we start out with water which contains much less salt to begin with.

I think an important note is that the tax dollars which are spent for water reuse can be derived, in part at least, from the tax dollars that would otherwise actually be spent for water pollution control because, in itself, any water reuse program has to be the finest form of water pollution control.9

### South Tahoe Public Utility District

The need for export of all treated effluent from the Lake Tahoe Basin to prevent the seepage of nitrates and phosphates into the Lake is discussed elsewhere in this report.

However, the project the South Tahoe Public Utility District is constructing to export treated sewage effluent from the Lake Tahoe Basin to Alpine County has developed into another pioneering waste water reclamation project. In order to assure highest quality water the district has constructed and is in the process of enlarging the most advanced waste treatment facility in the United States.10 The treatment plant at South Tahoe includes 1) the primary stage of treatment common to all sewage treatment plants, 2) the activated sludge process or secondary treatment utilized in many parts of the State, including the Whittier Narrows plant and 3) tertiary treatment utilizing chemicals and carbon filters to produce reclaimed water of drinking water quality. In fact, the final purified effluent of the plant far exceeds the United States Public Health Service drinking water standards. The effluent from the plant is crystal clear, colorless and odorless.

As a result of the development of the Legislative Action Program for South Lake Tahoe,11 the South Tahoe District, following the tertiary treatment, will transport the effluent by pipeline 29 miles over 7,200 foot Luther Pass to Diamond Valley in Alpine County.

In Alpine County the District will construct the 3,500 acre foot Indian Creek Reservoir. The Dam, a rock and earth filled structure, will be 860 feet long and 63 feet high and will have a water surface area of 165 acres. Water delivered to the reservoir will be utilized in Alpine County for irrigation. The project, however, will also include substantial recreation benefits. Through a cooperative program with the Bureau of Land Management of the United States Department of the Interior," the reservoir facility will have complete recreation and camping facilities. The project will be financed through a combination of federal grant, state loan, district funds, State Davis-Grunsky grant and Bureau of Land Management funds.\*

The District, while solving the pressing pollution problems of the Lake, will develop as an additional benefit the creation of a beautiful lake which will provide excellent recreational opportunities within Fishing at the Santee Project

easy driving distance of major northern California population centers. This is another example of the tremendous possibilities of waste water reclamation as both a pollution control activity and as a means of stretching existing water supplies.

<sup>\*</sup> Pending Federal approval.

Transcript, op. cit., page 60.
 San Francisco News-Call Bulletin, June 30, 1965.

<sup>&</sup>quot;For complete details on the Legislative Action Program see the Staff Report of the Assembly Interim Committee on Water, The Legislative Action Program for Lake Tahoe Pollution Control, 1966.

### Other Areas

In other areas of the State reclaimed waste waters are currently being reused and in some areas have been used for years.<sup>12</sup> One of the earliest examples is a treatment plant located in Golden Gate Park which processes a million gallons of sewage a day from San Francisco's Sunset District. The effluent from the project provides water for Stow Lake and Huntington Falls within the Park Sewage effluent is also being utilized for ground water recharge and to control sea water intrusion by the use of hydraulic barrier projects in southern California.

As a result of the activity to date, California is now the Nation's leading center of research projects developing the use of reclaimed waste waters Substantial studies are currently underway under the auspices of the Federal Water Pollution Control Administration and its advanced waste treatment program

### Reclamation Processes

It is not the purpose of this brief report to present detailed descriptions of various technical waste water reclamation processes Generally, however, present planning for waste water reclamation anticipates the utilization of conventional biological processes, which are the most economical type of treatment for reclamation For example, utilization of these conventional processes can economically reclaim approximately 25% of the total sewage and industrial wastes discharged to the ocean from the Los Angeles area

Considerable increases in the cost of reclaiming water are involved in the demineralization processes. Promising progress, however, is being made on reverse osmosis and in tertiary treatment such as that utilized by the South Tahoe Public Utility District.

There is considerable confusion over the difference between waste water reclamation projects and sewage treatment projects, the primary purpose of the latter being to prevent pollution. Waste water reclamation can be divided into two general classifications. First, that reclamation which occurs incidental to the treating of sewage, and, second, planned reclamation for the production and reuse of reclaimed waters, using existing and completely adequate sewage facilities as the source of water to be reclaimed

In the first situation, where reclamation is incidental, the sewage treatment plant performs a dual function. In this manner effluent from secondary, and even primary treatment, depending upon the use and quality of the input to the plant, may be considered reclaimed waste waters

### Public Response to Reclamation

Although fears of possible adverse public reaction to the reuse of reclaimed waste waters are common, our experience in California has shown that where the need for use of reclaimed waste water is great as, for example, in certain areas of Southern California, and the local agency developing the reclamation program conducts an appropriate public information program, public support of reclamation projects usually results.

The response of water interested groups has been uniformly favorable to reclamation.<sup>13</sup>

<sup>&</sup>lt;sup>12</sup> See Transcript, op. cit, Appendix, for complete list <sup>13</sup> For example the well known Southern California Civic Forum "Town Hall" conducted an extensive study on waste water reclamation and overwhelmingly endorsed reclamation for the Los Angeles area

### Areas of State Responsibility

Under the existing water laws there is no clear cut policy statement on the subject of waste water reclamation. Scattered throughout various Codes, however, are provisions that directly or indirectly relate to reuse of waters subsequent to sewage treatment and purification. The Committee believes that a policy statement encouraging maximum reuse of water reclaimed from sewage and industrial waste in California is needed <sup>1</sup> Therefore, the Committee recommends enactment into law of the following policy provisions:

13510 It is hereby declared that the people of the state have a primary interest in the development of facilities to reclaim waters containing sewage or industrial waste to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the state.

13511 The Legislature finds and declares that a substantial portion of the future water requirements of this state may be economically met by beneficial reuse of waste waters that have been reclaimed

The Legislature further finds and declares that the utilization of reclaimed waste waters by local committees for domestic, agricultural and industrial purposes will contribute to the peace, health, safety and welfare of the people of the state. Reuse of reclaimed waste waters constitutes the development of "new basic water supplies" as that term is used in Chapter 5 (commencing with Section 12880) of Part 6 of Division 6 of this code.

13512 It is the intention of this Legislature that the state undertake all possible steps to encourage development of waste water reclamation facilities so that reclaimed waste water may be made available to help meet the growing water requirements of the state.

As the subject of waste water reclamation is essentially a part of our overall water quality picture, it is appropriate that waste water reclamation legislation be made part of the State's Water Quality Control Law

In the following sections of this report on Waste Water Reclamation, the Committee will discuss the various responsibilities of each state agency involved in water reclamation activities together with recommended legislation to give the State a comprehensive waste water reclamation law.

### State and Regional Water Quality Control Boards

The principal responsibility for establishment of waste discharge requirements and the control of water pollution by the State rests with the nine Regional Water Quality Control Boards State water quality control is divided between the State Water Quality Control Board, when water quality is of statewide interest and concern and the Regional Boards when water quality is primarily a matter of regional concern (Water Code Sec. 13000) The Committee believes that logically the primary responsibility for administration of the waste water reclamation law proposed by this report should be placed with the State and Regional Water Quality Control Boards

Federal Grants The State Water Quality Control Board, under federal water pollution legislation, is responsible for the administration of the federal water pollution grant program in California (PL 660 program) The State Board evaluates all applications for federal grants in California and develops a list of eligible projects in order of priority Priorities are based upon a number of factors relating to the physical and economic aspects of the applicant project

Need for Legislation Under existing law, no special consideration is given in this evaluation to the extent to which waters treated by water pollution control facilities will be reclaimed and reused.

In order to encourage the development of pollution control facilities and waste water reclamation facilities the Committee recommends that the State Board be authorized to give additional priority to applicants for federal grants having facilities "providing optimum reclamation and reuse of waste waters."

<sup>1</sup> A similar policy declaration with regard to sea water conversion was enacted by the Legislature in 1965—Cobey-Porter Saline Water Conversion Law, Water Code Sec. 12945 et seq. The Department of Public Health and Water Resources both recommended to the Committee that a statute be enacted covering the entire subject of reclamation and reuse of waste water including a clear statement of state policy that waste waters are an important part of the waters of the state and should be reclaimed and put to beneficial use to the greatest extent compatible with the limitations of public health, agricultural and economic constraints

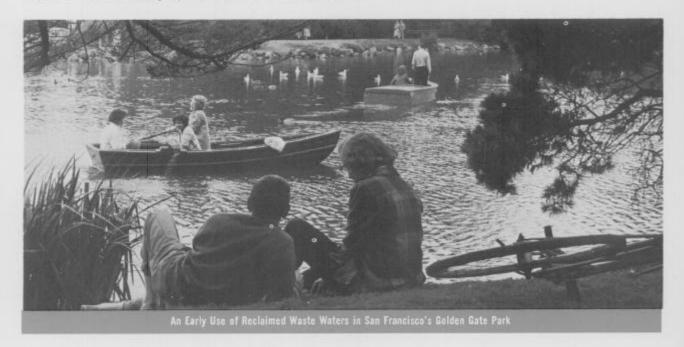
State Financial Assistance. In 1949 the Legislature enacted the State Water Pollution Control Fund (now Water Code Sec. 13100 et. seq.). One million dollars was placed in this fund for loans to municipalities and districts for the construction of sewerage and storm drainage facilities. Supervision of the program was placed with the State Water Quality Control Board.

Loans were limited to projects which were 1) found to be necessary to the health or welfare of the inhabitants of the State and 2) for which financing by the local district or municipality was not possible from sale of revenue or general obligation bonds or for which the financing would impose an unreasonable burden upon the municipality or district. The Fund is a revolving fund. To date, virtually all of the funds have been utilized principally by small communities in the State with very limited financial means. Its potential for future use, as presently funded, is extremely limited since returns to the fund from outstanding loans will be slow and of sufficient quantity only to meet very small project needs.<sup>2</sup>

At the 1966 First Extraordinary Session of the Legislature, Assembly Bill 12, which was sponsored by this Committee (later superseded by similar provisions in SB 2) appropriated \$2 million a year for five years from Tidelands Oil Revenues to the State Water Pollution Control Fund. As finally enacted, this money will be available during the 1967–68 through 1971–72 fiscal years. Thus, a total of \$10 million will be available. The legislation provided that the funds accruing to the Water Pollution Control Fund shall be expended, when appropriated by the Legislature, for capital outlay "for prevention and correction of water pollution."

Senate Bill 98 (Teale), also enacted into law in the 1966 First Extraordinary Session, represents the first appropriation by the Legislature for this purpose. This bill makes available \$2 million from the fund for loans to the North Tahoe Public Utility District and the Tahoe City Public Utility District for partial financing of the two Districts' joint export program.

Need for Legislation. In view of the tremendous financial needs of local public agencies in California for water pollution and waste water reclamation facilities the Committee believes that the temporary provision of Senate Bill 98, which provides for disbursement of the Tidelands Revenue set aside for this purpose for pollution facilities only on a project by project basis by the Legislature, is inadequate. The Committee believes that a more desirable means of utilizing the funds would be to establish a permanent, ongoing program of state loans to local public agencies not only for water pollution control facilities but also for projects to reclaim waste waters.



<sup>&</sup>lt;sup>3</sup> In fact, the State administration recommended and sponsored legislation at the 1965 Session of the Legislature which would have abolished the fund altogether (AB 2036).

Therefore, the Committee recommends that the State Water Pollution Control Fund be reconstituted as the State Water Quality Control Fund and that the \$2 million a year of Tideland Revenue which will accrue for five years be made a permanent appropriation to the Fund after utilization of the North Tahoe and Tahoe City Public Utility Districts of the \$2 million provided in SB 98. The Committee recommends further that financial assistance be made available for both a) facilities necessary to prevent water pollution and b) facilities which will produce water suitable for beneficial reuse, when the public agency has adopted a feasible program for reuse.

In view of the limited funds available for such a loan program, the Committee recommends continuation of the requirement that the facilities be necessary to the health or welfare of the inhabitants of the State and funds be otherwise not available. The Committee also recommends that loans be made for only that portion of the facilities not within the ability of the local public agency to finance, a concept similar to that of the Davis-Grunsky Act. The Committee recommends that the interest formula utilized in SB 98 be incorporated in the new program. The Committee further recommends that the loan program be established as a revolving fund assuring return flow of money into the fund to supplement the annual continuing appropriation.

The enactment of such a program of loans for both water pollution and waste water reclamation facilities represents the first direct state financial assistance for waste water reclamation activities. Although the amount of money available for this program is not great it does represent approximately 20% of the total federal funds annually available to California (as of the writing of this report) under water pollution grant programs.

The Committee believes that the State, the federal government and local agencies have a responsibility to work to develop public acceptance of waste water reclamation.

Probably one of the primary hurdles a local area faces in developing reclamation programs is the undertaking of preliminary engineering and technical studies.

In order to provide additional impetus to local development of such facilities, the Committee recommends further that up to \$250,000 of the \$2 million available each year in the State Water Quality Control Fund be made available for grants to local public agencies (on a matching basis) for waste water reclamation studies. Such grants should be limited to a maximum of \$50,000.

A final problem encountered in the reuse of reclaimed waste waters is the legal one. More definitive answers are needed, particularly with regard to percolation of reclaimed waste waters underground. The Committee has been unable, in its short investigation, to resolve the many complex and technical legal problems involved. It recommends additional study of this aspect of waste water reclamation.

### State Department of Public Health

The State Department of Public Health strongly supports the development of waste water reclamation. The Department's representative told the Committee,

The interest of the State Health Department, in addition to its prime function in protecting the health of the people of the State, is to improve the environment of those citizens. I believe, the . . . reclamation and direct reuse of sewage, as distinguished from discharging partially treated sewage into the waters of the state to be disposed of by dilution, will probably represent, over the next decade or two, an upgrading of the waters of the state . . . We see a tremendously important . . affirmative public health objective to be served by the development to its logical conclusion of reclamation and direct reuse of waste waters.<sup>3</sup>

The State Department of Public Health has a traditional responsibility for the protection of the public health whenever water is used for human purposes and direct use The responsibility of the Department of Public Health relates primarily to contamination, which generally refers to impairment of the quality of water to a degree that creates an actual hazard to the public health through poisoning or through the spread of disease (Health and Safety Code Sec 5410(e))

<sup>3</sup> Transcript, op cit, pages 19-20

Sections 203 et seq. of the Health and Safety Code set forth the Department's responsibilities to protect the sources of public domestic water and ice supplies. In regard to these sections, representatives of the Department have indicated that "the Department does not feel that they furnish a sufficiently clear and unequivocal assignment of responsibility and authority to cope adequately with the wide range of new exposures to the public to reclaimed sewage which is just now coming into view." 4

Sections 5410 et seq of the Health and Safety Code relative to industrial waste in addition to repeating Water Code definitions, provide that the State Department of Public Health or any local health officer, upon finding contamination existing, shall order abatement (Sec 5412) The Department or local health officer may also issue a pre-emptory order requiring abatement This action must be reported immediately to the affected regional water quality control board. The Department or local health officer is also authorized to request a court injunction to prevent the contamination. These sections confer upon the Department of Public Health adequate authority to deal promptly and effectively with hazards to health including those from a discharge of waste water, including reclaimed waste waters. The provisions do represent, however, an *indirect*, after the fact supervision rather than preventive regulation.

A final provision of the Health and Safety Code (Section 4458) specifically regulates the injection of reclaimed sewage by wells into the underground aquifer This section was enacted in 1961 under the sponsorship of the Chairman of this Committee to provide effective control over the use of reclaimed sewage to be injected as part of the coastal barrier projects in Southern California developed to prevent sea water intrusion into ground water aquifers The section is being given its first test currently in the trial injections of reclaimed sewage by the Orange County Water District for its barrier project. The Department and the Committee agree that this particular section provides satisfactory control over this method of utilization of reclaimed waste waters

Need for Legislation The Committee believes that its most important objective in recommending legislation relating to the use of reclaimed waste waters is the absolute protection of the public health. In order to assure this protection the Committee recommends that the State Department of Public Health be required to establish "statewide contamination standards", which would represent the maximum concentration levels of various constituents of reclaimed water which are permissable for each type of use. Standards would be established for such uses as swimming, fishing, irrigation, etc 5 These contamination standards will provide a guideline similar to Federal Public Health Service Drinking Water Standards, which can be applied prior to the initiation of waste water reclamation projects The establishment of such standards will provide a preventive control over the use of reclaimed waters

We further recommend that enforcement be accomplished 1) by specifically applying the summary abatement authority of the State Department of Public Health to waste water reclamation activities. This represents a restatement and reinforcement of the basic responsibility of the State Department and local health agencies; and, in addition, 2) by requiring that the Regional Water Quality Control Boards establish waste discharge requirements for reuse of reclaimed waste waters used directly or otherwise 6 Such discharge requirements must be in conformity with the "statewide contamination standards" for the particular use contemplated

This recommendation meets the needs for more complete regulation requested by the Department To implement this the Department can undertake a far greater and more intensified program of surveillance, inspection and regular observation of waste water reclamation activities. The "contamination standards" will "fill the gaps" in the Department's responsibility under the present law.

<sup>&</sup>lt;sup>4</sup> Transcript, op cit, page 21 <sup>5</sup> Such a law was endorsed by the Department of Water Resources See Transcript, op cit, page 7 <sup>6</sup> This was also recommended by the Director of Water Resources, see Transcript, op cit, page 10

### State Department of Water Resources

The Department has certain statutory responsibilities with regard to waste water reclamation. Section 230 of the Water Code directs the Department "to conduct surveys and investigations relating to the reclamation of water from sewage or industrial waste for beneficial purposes."

To carry out these responsibilities the Department has developed a two-part program: First, the survey of the quality and quantity of waste waters available, and second, investigation in detail of those areas where waste water reclamation is indicated and where a local interest in waste water reclamation in the opinion of the Department should be stimulated <sup>7</sup> The conclusion of the Department in all but one of its studies was that waste waters could be reclaimed to provide supplemental supply "to relieve the strain on other sources."

The survey portion of the Department's program is termed "quality and use of waste water" According to the Department,

The objectives of the survey are to determine the quantity, quality and location of significant waste water discharges in the state, to locate areas in which supplemental water demands might be in part satisfied by the planned reuse of waste water; to maintain an inventory of existing water reclamation operations and study associated costs, problems, and benefits; to assimilate information and data collected to the Legislature and to interested state and local agencies and individuals; and to encourage and stimulate the planned reuse of good quality waste water 8

Need for legislation The committee has, on several occasions expressed its belief that the Department's primary responsibility in the area of water pollution and water quality control is that of providing technical data collection and investigation necessary to meet the State's responsibility in these fields In order to provide a coherent and comprehensive waste water reclamation law, the Committee recommends that the Department's waste water reclamation study authorization (Water Code Section 230) be repealed as part of the general water statutes of the State and reenacted as part of the State's comprehensive Waste Water Reclamation Law proposed by this Committee

In the past, the Department has conducted waste water reclamation and ground water investigations in various areas for various purposes on appropriation by the Legislature. For one reason or another, not all have been fully implemented on the local level. Particularly, with regard to ground water basin studies, problems of lack of coordination between the Department and local people (the primary beneficiaries of the studies) existed

In order to maximize the benefits of the departmental investigations and studies under this provision it is recommended that the Department studies under existing Water Code Section 230 be limited to those studies requested by the State's water pollution and water quality policy agencies. Thus, the State Water Quality Control Board together with the Regional Water Quality Control Boards, would then determine the relative priority of investigations and studies The State Board, as the primary agency responsible for water quality control (and waste water reclamation activities under the Committee's draft statute) could provide policy direction for such studies. Maximum local use can be made of departmental investigations and studies through the liaison provided by the Regional Boards. It is essential that complicated, costly, and comprehensive departmental studies for planned reuse from water reclaimed from industrial waste and sewage be carefully tied in with local projects, since it is at the local level that financing and development of the physical works needed to provide such reuse are accomplished.

The Davis-Grunsky Act The Department of Water Resources administers the Davis-Grunsky Act of state financial assistance through loans and grants for local water development projects Loans are made to local public agencies for only that portion of the construction costs of dam and reservoir facilities which are "beyond the reasonable ability of the public agency to finance from other sources." Grants are authorized for construction costs of dams and reservoirs allocable to recreation and fish and wildlife enhancement, regardless of the financial condition of the constructing agency. Inasmuch as dam and reservoir facilities are frequently involved in reuse of reclaimed waste waters, the Davis-Grunsky Program may also be of incidental assistance to local areas in developing waste water reclamation projects.

 $<sup>\</sup>bar{\ }$  See Transcript, op. cit., page 9 for complete list of studies  $^9$  Transcript, op. cit., page 5

A formal application for a Davis-Grunsky recreation grant has been submitted by Los Angeles County for a series of lakes located near Lancaster in the Antelope Valley which utilize reclaimed waste waters Also, San Bernardino County is preparing a formal application for a recreation grant for lakes to be developed at the Prado Dam Basin and also utilizing reclaimed waste waters

The Davis-Grunsky Act requires that to be eligible a project for either loans or grants must involve "development of a new water supply."

The Committee recommends that the Water Code be amended to make clear that the use of reclaimed water represents the development of a new water supply within the context of the Davis-Grunsky Act to assure that grants or loans will be available for construction costs of dams and reservoirs using reclaimed waste waters as well as natural supplies

### Areas of Local Responsibility

Primary responsibility for water quality control facilities rests with waste dischargers—local communities and industries. Regional developments have been undertaken in water quality control, but these represent extensions of the local concept under which a number of communities have banded together for more efficient development

Similarly, local people will have primary responsibility for waste water reclamation. It is appropriate for the Legislature, in enacting a Waste Water Reclamation Law, to limit state regulation to 1) the protection of public health, safety and welfare in a manner similar to the regulation by the State and Regional Boards of water pollution and water quality control, and, 2) provision of the maximum state financial support for local development of these facilities

A considerable challenge is faced by local governmental bodies in utilization of reclaimed waste waters. In many cases, a number of different agencies and levels of government will be involved in reclamation, as illustrated by the Whittier Narrows Project For example, distribution and treatment of water supplies may be the responsibility of a different agency than that which collects, treats and finally disposes of the waste. Decisions to reuse industrial waste waters, of course, must rest with the industries involved A variety of local agencies, replenishment districts, flood control districts, park and recreation districts, etc, each with independent statutory authority and responsibilities will be involved in development of local waste water reclamation. At this point it appears that existing local agencies are flexible enough to meet this challenge.

A considerable quantity of water is utilized in California by industry. The record of industry in California in water pollution and water quality control is commendable. In addition, many industrial firms in California have already engaged in considerable reclamation and recycling and reuse of water.

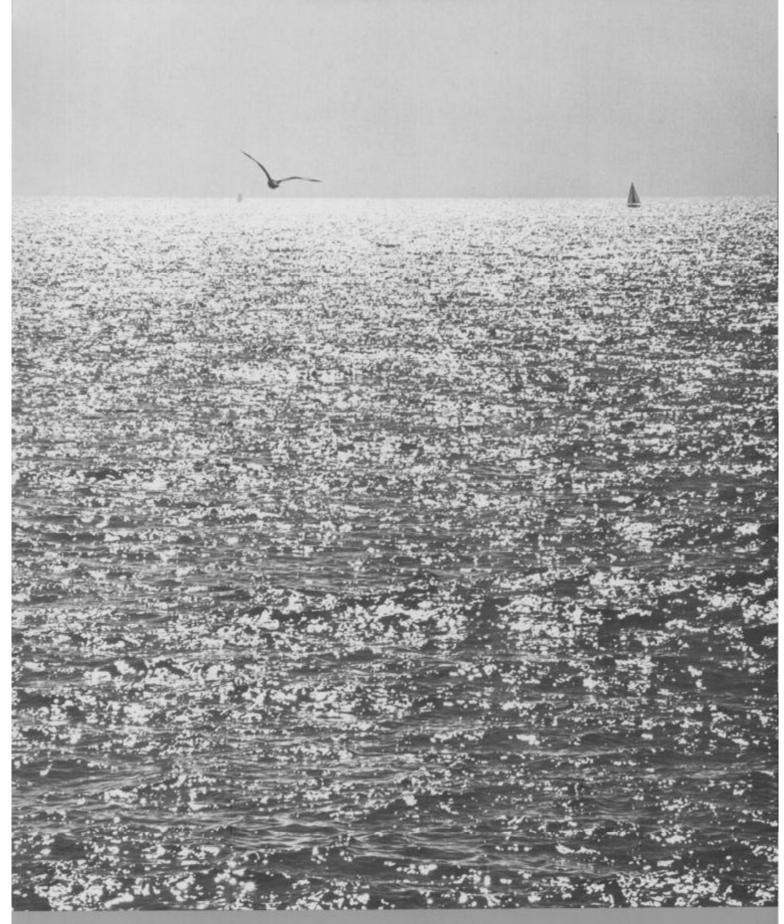
A representative of the Department of Water Resources indicated,

Most of the modern plants are being operated by what I call 'enlightened businessmen'... I could mention one to be specific. the Kaiser Steel Plant... in Fontana.. They use their water over and over again until finally the last process is quenching from the slag and there's no water left. They literally use the 'squeal' that we used to hear about packing plants. The water is used to the ultimate, as a result the underlying ground water—which is very important to both agricultural and domestic people in that area—has remained in useable condition for these past fifty years or more and, apparently, shows no very great degradation, if any.9

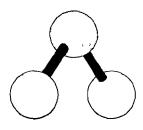
Gradually, as the cost of basic water supplies increases, the use of reclaimed waste water and the reuse of existing supplies will become more attractive to business and industry. The State, in implementing the policy declaration in the proposed waste water reclamation law, should make every effort to encourage the maximum reuse of water and the reclamation of waste waters by industry.

The United States Congress is currently considering a number of proposals to aid industry in combating pollution (and reusing water) by means such as tax incentives and related devices.

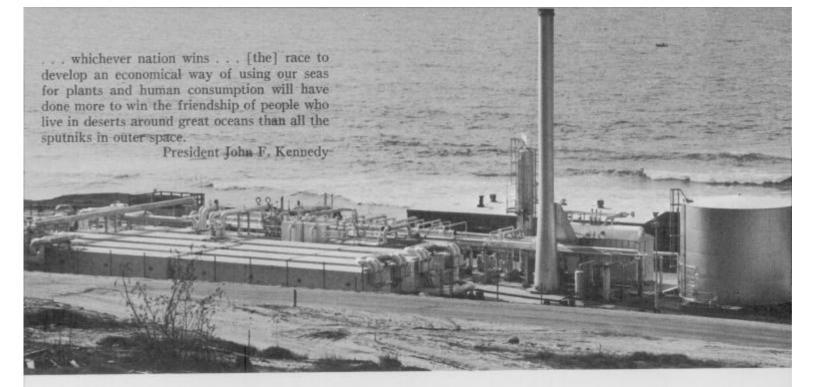
<sup>\*</sup>Transcript, op cit, page 15



THE PACIFIC OCEAN OFF HUNTINGTON BEACH



New Horizons in California Water Development



## II

# Sea Water Conversion and Nuclear Energy

# Background

Since 1957, the Assembly has carefully followed developments in the field of saline water conversion and nuclear energy. This has been done in order that the Legislature could be fully informed regarding the implications of these two advancing technologies on the State Water Project and water planning in general. At the beginning of every General Session, a progress report has been submitted to the Legislature which has outlined the major developments of interest to California in saline water conversion and nuclear energy matters. This report continues that practice.

In preparing its report two years ago, the committee noted that the initial goals of applying both saline water conversion and nuclear energy to the solution of California's water problems was "nearing achievement." The current report indicates further progress to such an extent that the execution of presently contemplated plans could constitute achievement of the initial goals in terms of both economic and engineering feasibility.

While at first glance it might appear that the construction of the State Water Project, the development of saline water conversion processes and the application of low cost nuclear energy are relatively unrelated to the state's water problems, this is not the case. As an alternative to the importation of large additional supplies of water in the future, the State of California needs to understand fully the problems and economics of saline water conversion. In addition, since large amounts of low cost energy are an important factor in producing both low cost converted water and transporting surface water, the cost of energy is directly related to the economics of both water transportation and conversion. Finally, the development of nuclear energy as an important source of low cost energy in California has a major bearing on the nature and extent to which hydroelectric generation can be incorporated in water projects. The state's first participation in saline water conversion, other than financing research at the University of California, was with the federal Office of Saline Water in sharing the construction costs at the Point Loma demonstration plant in San Diego.1 Since then, by continuing its research, development and construction activities as discussed in the present report, the State of California and other agencies have followed a consistent pattern which will provide timely information to make sound decisions in the future when major new surface water importation facilities must be evaluated against seawater conversion, brackish water conversion, reclamation of waste waters and other alternatives.

<sup>1</sup> The plant was subsequently dismantled and transferred by the U.S. Navy to Guantanamo Naval Base in Cuba to provide a water supply for that facility. It is in this context that the committee reports with pride the accomplishments of the Office of Saline Water, the Atomic Energy Commission, the Department of Water Resources, the Metropolitan Water District of Southern California, the University of California and numerous other agencies and organizations Their activities and foresight have placed the State of California in the forefront of developing saline water conversion and nuclear technology which in future years will be of immeasurable benefit to California.

# Clair Engle Saline Water Test Center

During 1965 it became evident that statutory policy for state participation in saline water conversion was needed because of the increasing prospect of state participation in such plants. The 1965 General Session of the Legislature passed the Cobey-Porter Saline Water Conversion Law<sup>2</sup> which established state policy in the development and application of saline conversion processes for California In addition to declaring the state's interest in the development of saline conversion, the statute authorizes the Department of Water Resources to cooperate with other public or private agencies in a program of investigation, study and evaluation of saline conversion technology Departmental construction of a state conversion plant also may be undertaken after submission of a written feasibility report and specific legislative authorization and the department may participate in projects with public and private agencies. In a related bill, the Legislature authorized the department to convert the 50 percent interest the state had in the Point Loma Demonstration Plant to a new test facility the Office of Saline Water is constructing in San Diego The department also was authorized to distribute the product water from the new test facility through transmission facilities it would construct, provided that the cost of constructing the transportation facilities was recovered by the charges for the water

The above legislation was quickly implemented On August 10, 1966 a contract was signed by the Office of Saline Water and the Department of Water Resources which granted the state a 25 percent interest in the new San Diego test facility which was subsequently designated the Clair Engle Saline Water Test Center Since April 1966, construction has been progressing under a \$1,985,000 contract awarded by the Office of Saline Water for a one million gallon per day advanced technology demonstration plant.<sup>3</sup>

A contract was also awarded by the Office of Saline Water to the Fluor Corporation of Los Angeles for the design of a 17 million gallon per day test module. The construction contract for the module is expected to be awarded by the Office of Saline Water early in 1967. While the module will be rated at 17 million gallons per day, the Office of Saline Water will actually construct a cross section of the module for test purposes which will produce about 2.5 million gallons per day. This module cross section is-expected to provide the necessary design data for scale-up to the 50 million gallon per day plant to be constructed by the Metropolitan Water District as discussed below

The Department of Water Resources will market the water from these facilities, both of which are located at the Clair Engle Saline Water Test Center The Legislature appropriated \$350,000 in the Budget Act of 1966 to construct the product water transportation facilities and the Department of Water Resources has executed a contract with the City of San Diego for the purchase of the water.

The construction plans and schedules of the Office of Saline Water thus propose to proceed from the original Point Loma demonstration plant to the advanced technology demonstration plant, to the test module and finally to the construction of the 50 million gallon per day design for the Metropolitan Water District. The latter, in turn, will provide the basis for improved designs if the decision is subsequently made to increase the capacity to 150 million gallons per day (Phase 2) at the Metropolitan Water District's plant Although the schedule is tight and includes some overlap, it contemplates a ten year program which will focus major attention in saline conversion developments at the Clair Engle Test Center and at the Metropolitan Water District's plant.

<sup>&</sup>lt;sup>2</sup> Water Code Sec 12945 et seq
<sup>3</sup> The plant will operate at temperatures up to 350° Fahrenheit, will have 66 flashing stages and a 20-1 performance ratio in contrast to the 10-1 performance ratio of the old

The test site is located on property being made available by the San Diego Gas and Electric Company at its South Bay plant site. The company will furnish steam and electric energy to the test facility at cost. The test facility represents an example of excellent cooperation between federal, state, local and private interests to advance the technology of saline water conversion.

## Metropolitan Water District Dual Purpose Plant

On August 19, 1966, a memorandum of understanding was signed by the Metropolitan Water District of Southern California and the United States Government. This memorandum provides for the construction of a 150 million gallon per day combination power and desalting plant using a nuclear energy source The committee cannot overstate the importance of this memorandum because it forms the basis for the construction of a plant which represents several of the committee's objectives since its organization in 1957

In a ten year period, the development of technology in the field of saline conversion and nuclear energy has progressed to the point that this plant can be designed and constructed to produce fresh water at a cost estimated by the Bechtel Corporation at approximately \$72 per acre foot at the plant site or \$88 delivered to the Diemer Filtration Plant of the Metropolitan Water District.

Although the costs of water from the plant will be higher than the average long term cost of water delivered in southern California by the State Water Project, the significance of the plant lies in the opportunity to utilize it to test and develop technology and evaluate economic factors which may lead to assuring southern California of a continuing future supply of fresh water from the ocean by the construction of additional conversion plants

The plant also demonstrates a commendable and high degree of cooperation between the Metropolitan Water District and two federal agencies, the Office of Saline Water of the United States Department of Interior and the Atomic Energy Commission, two private utilities, the San Diego Gas & Electric Company and the Southern California Edison Company, and a public water and power distribution agency in the form of the Los Angeles Department of Water and Power The sharing of costs and the pooling of resources by these agencies represents an unprecedented effort and without their wholehearted cooperation the project could not be realized.

The committee appreciates, from its previous studies and its understanding of developing technology, that the economic siting of any large scale plant which produces both fresh water and electric energy using a nuclear reactor as a source of heat is extremely difficult. This is because of the size of the market required for both the relatively high cost product water and the large amounts of power produced, the complexities of the interagency cooperation required, and the fact that only a limited number of areas in the United States provide the combination of the above factors along with sufficient interest to finance and construct such a plant

Although the feasibility study of the plant prepared by the Bechtel Corporation was based on a plant producing 150 million gallons per day of product water the present plans provide for a stage construction. The 150 million gallon per day plant will consist of three 50 million gallon per day units. These, according to the memorandum of understanding, are to be constructed in two phases. Phase 1 provides for the construction of the entire power facility with 1,800 megawatts of installed power generating capacity, a 50 million gallon per day desalination plant and the nuclear reactor for the needed heat to operate both the generating and desalting plants. Phase 2 includes the future construction of the additional 100 million gallon per day capacity. The final decision to proceed with this phase is deferred to a later date and, if constructed, the plant will probably reflect the experience resulting from operations under Phase 1

The two tables below show the breakdown of costs between the participants for Phases 1 and 2. The difference in the tables is the increased cost to the Metropolitan Water District and the federal government for the increase in capacity to 150 million gallons per day.

Pursuant to the memorandum of understanding, the Metropolitan Water District will be the master contracting agent The Office of Saline Water and Atomic Energy Commission will contribute funds to cover the necessary research and experimental features of the desalting plant and the nuclear reactor The utilities will finance, construct and operate all the generating facilities. The plant will consist of an artificial island of 43 acres to be constructed off the Orange County coast, two pressurized or boiling water reactors supplying steam to two condensing turbines and a back pressure turbine with gross electrical capacity of about 1,800 megawatts, a multistage flash distillation type desalting plant capable of producing 150 million gallons per day of distilled seawater and necessary auxiliary facilities

Table I

Metropolitan Water District Sea Water Conversion Plant
Allocation of Investment—(1965 Price Basis)

First 50 million gallons per day stage

	Total Investment	Utilities Investment (Millions of Dollars)	Government Contribution	MWD Investment
Desalting Plant	42 4	0	35 7	6 7
Power Components & Related Facilities Island, Causeway, Land & Land Rights	235 3	213 1	8 5	13 7
(Switchyard)	24 1	0	5 O	19 1
Conveyance Facilities	32 1	0	0	32 1
Power Transmission	43 8	43 8	0	0
Sub Total	377 7	256 9	49 2	71 6
Less Decreased Interest Charge	-2 5	0	0	-2 5
TOTAL	375 2	256 9	49 2	69 1

Table II

Metropolitan Water District Sea Water Conversion Plant
Allocation of Investments—(1965 Price Basis)
150 million gallons per day plant

	Total Investment	Utilities Investment (Millions of Dollars)	Government Contribution	MWD Investment
Desalting	107 4	0	45 7	61 7
Power Components & Related Facilities	235 3	213 1	100	12 2
Island, Causeway, Land & Land Rights				
(Switchyard)	24 1	0	5 O	19 1
Conveyance Facilities	33 7	0	0	33 7
Power Transmission	43 8	43 8	0	0
	<del></del>	<del></del>	- <del></del>	
Sub Total	444 3	256 9	60 7	126 7
Less Decreased Interest Charge	-3 6	0	0	-3 6
TOTAL	440 7	256 9	60 7	123 1

Total estimated costs are \$375.2 million for the full power development and the initial 50 million gallons per day desalting plant of Phase 1

The memorandum of understanding entered into between the Metropolitan Water District and the federal government covers participation by both the Office of Saline Water and the Atomic Energy Commission. It will be followed by a contract between these parties which will establish the details of the cooperation. Meanwhile, Congress has considered a bill which will authorize Office of Saline Water participation and has already passed legislation to authorize Atomic Energy Commission participation. The Metropolitan Water District will eventually sign contracts with the Los Angeles Department of Water and Power (which in turn may contract with Glendale, Burbank and Pasadena) for the financing and construction of one of the electric generating units. A somewhat similar contract will be required with the private electric utilities for the second generating unit.

At the present time, Orange County is evaluating the recreational potential of the island plant site and the possibility of adding a small craft marina to it.

The committee cannot overemphasize the significance to the state in the construction of this plant. Not only will it be by far the largest in the world, but it also represents a major advance in the construction of large scale saline conversion plants. The plant will also offer opportunities to evaluate the economic and technical benefits from mixing converted water with lower quality water. In addition, it will provide an important basis for evaluating saline conversion costs and technology against the importation of large amounts of additional water from northern California or elsewhere when the expansion of the State Water Project or the construction of new importation facilities may be proposed.

In justifying Office of Saline Water participation in the plant, Assistant Secretary of the Interior, Frank DiLuzio, stated the federal interest in the plant to the Senate Interior and Insular Affairs Committe:

I should like to caution the committee that the attractive economics of desalted water at approximately 21.9 cents per thousand gallons, as estimated by the Bechtel Report, is only possible because of the size of the power plant and to a minor extent the water plant. The OSW has a big task ahead to reduce the cost of desalting water in plants of 5 to 25 million gpd or smaller. Inasmuch as energy represents 40-55 percent of the total cost per unit of water, low-cost heat is of vital importance to a desalting plant. In many instances and in many locations, because of plant size and availability of fuel, fossil fuel whether it be coal, oil, or gas, will represent the cheapest source of energy. The major contribution of the dual-purpose reactors for the MWD plant is the lowcost energy they provide. . . .



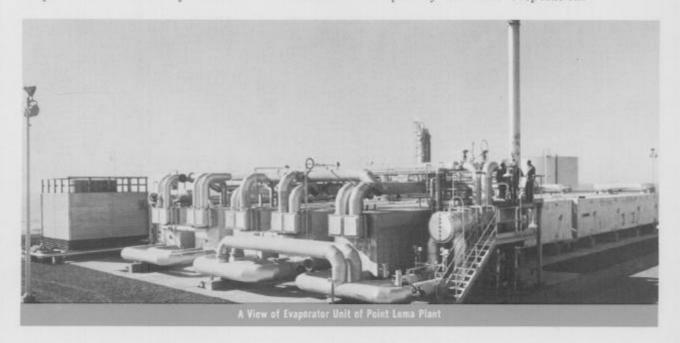
The MWD plant provides an economic breakthrough in desalting because of the size of the power plant to meet the power requirements of southern California. But this same set of conditions will not always be duplicated, and we must constantly seek to lower the cost of desalted water by reducing capital investment and operating costs, a very complicated and technically difficult task. The data obtained from the construction and operation of the MWD plant will enable us to scale up or down with limits of down to 15 million gpd and up to 300 million gpd, to meet water supply problems as they develop. Desalting is not a panacea for all of our water ills but it is an alternative which cannot be ignored. In the development of any incremental water supply program, it must be considred with other alternatives, such as waste water reclamation, so that the most efficient and economical sources of supply can be selected to meet future water demands.

The committee believes that the decision by the Metropolitan Water District to undertake construction of the dual purpose plant and the participation by the cooperating agencies deserve high commendation. Further, it urges proceeding with design and construction of the plant if all parties involved continue to find its construction feasible as work progresses.

## Pumping Energy for the State Water Project

In its report of December 1964,<sup>4</sup> the committee called the attention of the Legislature to the decision by the Department of Water Resources to proceed jointly with the Atomic Energy Commission to construct a 575,000 kilowatt seed-blanket nuclear reactor to provide a source of pumping energy for the State Water Project. At hearings held by the committee in 1964, inadequate testimony was presented to permit the committee to endorse the use of this reactor in the State Water Project.

The committee's report used the term "experimental" to describe the reactor and pointed out that a reactor of the type and size being proposed had not previously been constructed. The committee, therefore, recommended that the Department of Water Resources not make any commitments for joint construction with Atomic Energy Commission of the seed-blanket reactor until an engineering review had been made comparing the reactor with other commercially available reactors. In addition, negotiations were then beginning with the California Power Pool Companies for the purchase of project pumping power from these utilities and finally all available data on the power needs of the State Water Project had not been fully studied as recommended in a report by the Fluor Corporation.<sup>5</sup>



Vol. 26, No. 12.

<sup>&</sup>quot;Energy Source Study for the State Water Project," Sept. 1964.

The committee advised the department of its recommendations and suggested further study and negotiation. On June 1, 1965 and in December 1965 the Department of Water Resources reported on energy sources for the State Water Project and other power matters. By means of these reports and quarterly progress reports, the Legislature has been kept advised of the most important departmental actions in the field of nuclear energy, contracting for the sale of State Water Project power and contracting for the purchase of necessary pumping energy. The department has, during the past two years, complied with the spirit and specific requirements of the requests made by this committee and the Legislature for information and additional studies.

In January 1966, the department and the Atomic Energy Commission announced that problems had arisen in the core design of the seed-blanket reactor which would take from two to four years further research and development work. The department concluded that it could not wait for such an extended period of time and has been proceeding with preliminary work to construct a nuclear power plant using a commercial reactor design rather than the seed-blanket design

The committee believes that this recent decision by the department was sound and that it justifies the committee's caution concerning the experimental nature of the seed-blanket reactor as previously expressed. Obviously, the objective of a breeder-reactor, which the seed-blanket reactor design sought to achieve, is highly desirable. In future years the technical problems may be solved and a breeder-reactor nuclear power plant may be built by the state or some other agency.

In testimony before the committee on January 13, 1966, the department stated its intention to proceed with the planning, design and construction of a commercial nuclear reactor as a source of pumping energy for the State Water Project. This decision reflects the department's continuing desire to use nuclear power and is in accordance with further studies by the Fluor Corporation which the committee had recommended in its last report.

To this end the department had contracted with the Fluor Corporation for a "Supplemental Economic Review" for the California State Water Project This report was published in January 1966. It represented a refinement of the earlier 1964 study by Fluor and specifically compared the offer of the Power Pool Utilities made in March 1965 to supply power for a "minimum on-peak method" of pumping operation with the cost of a state constructed nuclear power plant

The results of the January 1966 report confirmed the findings of the earlier Fluor report that a state constructed nuclear reactor and power plant would be the lowest cost source of pumping energy. An energy cost of 2 62 mills per KWH was estimated. (The committee has noted that this January 1966 report, like its predecessor, did not make allowance for taxes foregone. This problem was discussed fully in the committee's last report.) As a result of the findings in the second Fluor report, the department is serving its pumping energy requirements by integrating the Power Pool Utilities' "minimum on-peak method" with state construction of a nuclear power plant.

Minimum on-peak means that the department will purchase off-peak energy from the utilities to cover its pumping needs based on an off-peak pumping pattern insofar as possible Additional energy needs thereafter will be met from the department's generation at the aqueduct power drop generating plants, from its Canadian Treaty entitlements, from surplus power available from the Bonneville Power Administration and finally from on-peak power purchased from the Power Pool Utilities.

Initially, the department will secure its pumping energy requirements from the utilities using the "minimum on-peak method" of aqueduct operation under a contract signed in November 1966 with the utilities and public agencies involved. Under the contract, the department can give advance notice of its intention to construct a nuclear power plant and six years thereafter reduce its purchases from the Power Pool Utilities accordingly. The department plans to give such notice after it has made final plans for construction of a nuclear power plant and to construct a 600 megawatt nuclear power plant.

<sup>1</sup> Pursuant to HR 628 (1965 Regular Session) introduced by Chairman Porter

for initial operation in 1973. In 1982, the department plans to complete a second nuclear power plant to meet both the greater need for pumping energy because of increased demand for project water and to replace power presently available on a limited term basis from the Pacific Northwest. Also, contracts for the purchase and delivery of Pacific Northwest power recently have been executed.

During 1966, the department has been working on geologic investigations to select a site for the nuclear power plant. The site selection has been narrowed down to the Tehachapi Mountain area and Cayucos on the San Luis Obispo County coast. Architect-engineering studies on the plant are being started after which economic and financial studies will be undertaken before a final decision to proceed with construction is made. The department is therefore proceeding on an orderly basis with its preparation to construct a commercial (rather than experimental) nuclear power plant for pumping energy.

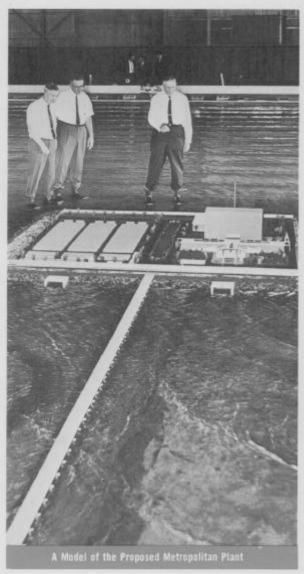
In September 1966, the department executed a contract with the Department of Water and Power of the City of Los Angeles for cooperative development of the powerdrop on the West Branch of the Southern California Aqueduct. Instead of constructing a 7 mile, 17 foot diameter Angeles Tunnel between Pyramid and Castaic Reservoirs and a power plant at Castaic with a capacity of 214 megawatts, the agreement provides for joint construction of a 30 foot diameter tunnel and a pumping-generating plant with a peak capacity of 1,250 megawatts.

Los Angeles will construct and operate the power facilities while the state will construct the water conveyance and storage facilities. The city will furnish to the state an amount of power equivalent in value to that which would have been generated by the 214 megawatt state power plant. The remainder of the power will be used by the City of Los Angeles to meet its peaking requirements.

The contract generally calls for sharing the benefits derived from the cooperative development. It appears to be a wise investment for the state since the state can reduce its capital costs and eliminate operating costs at the power plant. The construction of a 1,250 megawatt pump-back power plant also represents a major technical advancement in the use of the pump-back concept to provide necessary peak capacity for large urban areas and the committee believes the parties involved should be commended.

Studies and negotiations for the sale of electric energy generated by the State Water Project at Oroville are continuing. No contract for the sale of this power has yet been negotiated and the signing of a contract is not immediately in prospect even though studies and negotiations have been proceeding for many years and initial generation is expected in 1968.

All construction, contract negotiations and planning by the Department of Water Resources assumes that the major transmission and substation facilities involved in the sale or purchase of State Water Project energy will be supplied by the electric utilities.



The committee concurs with the execution of the contract to purchase pumping power by the Department of Water Resources and the pool utilities. It further believes that the department should continue to evaluate nuclear energy at a deliberate and cautious pace as a possible source of future pumping energy for the State Water Project. Any decision by the department to construct a nuclear power plant to provide future pumping energy should be carefully documented by economic, engineering and other technical studies, all of which should be fully reported to the Legislature before any commitments are made.

## Other Utility Nuclear Generation

The Southern California Edison Company is completing construction of a major new electric power plant using a nuclear reactor as a source of heat. This plant, which is rated at about 400 megawatts, will be the first large scale commercial generating plant in California Construction is now being completed at the site along Pacific Highway 101 at San Onofre near Camp Pendleton in San Diego and full commercial generation is expected late in May of 1967. A visitor center has been opened to permit the public to observe the plant and explain its operation.

Within recent weeks the Pacific Gas and Electric Company has announced plans to construct a nuclear electric generating plant at Diablo Canyon in San Luis Obispo County with a minimum capacity of 800 megawatts. Agreement has been reached with interested natural resource conservation groups and agencies on the selection of the site Construction is scheduled to start soon so that commercial generation can begin in 1972

The Sacramento Municipal Utility District has also announced plans to construct a nuclear generating plant in the range of 500 to 750 megawatts. A site has been purchased in southeastern Sacramento County and initial operation is planned for 1973

As a result of the foregoing developments, four nuclear generating plants of very large size are being prepared for construction or are under construction in California. The state's proposed plant for pumping energy would add a fifth plant to the list Of course, several smaller plants are already in operation. The committee believes that the development of nuclear energy in the state is proceeding at a gratifying pace. It is clear that the large scale generation of electric energy using nuclear reactors for a source of heat has become feasible in California and a new era of technological development in supplying energy has arrived

## Reverse Osmosis Development

In recent years, much attention has been given to the reverse osmosis process on which the University of California did much of the early research and development work. Since then, field work has been started by the University (as discussed below), the Office of Saline Water has been financing further work and several industrial firms have been working on the development of commercial applications for the process. Illustrative of the industrial development work is that by General Atomic Division of General Dynamics at both Pomona and San Diego. A simplified explanation of the reverse osmosis process is shown below

At the time of its hearing in San Diego on January 1966, the committee visited the test work of the City of San Diego and General Dynamics at the city's new Point Loma Treatment Plant. The project had just started operation but preliminary results indicated that the process has excellent application for waste water reclamation in that it removes both mineral and other impurities and did not show significant indications of clogging due to the organic impurities in the waste water being used as feed water.

General Dynamics is also experimenting with the reverse osmosis process at Pomona for reclamation of waste water. In an April 1965 report the firm claimed significant progress and considerable success in applying the process to waste water although some problems with flow loss due to deposits collecting on the membrane material and blocking of membrane pores occurred. Cost projections based on the waste water reclamation experiments at Pomona produced estimates for a 10 million gallon per day 7 plant operating within a range of \$0.13 to \$0.25 per million gallons per day, depending on several assumptions regarding membranes used and construction and operating factors

<sup>r</sup> About 10,000 acre-feet a year

### Reverse Osmosis

"The reverse osmosis process holds promise of significantly reducing the cost of converting saline water. This is so because the system is inherently simple and, unlike many other processes, no phase change is involved, reducing energy costs to an extremely low value .."

Report to the President, September 22, 1964, U.S. Department of the Interios, in collaboration with the U.S. Atomic Energy Commission

#### What Is Reverse Osmosis?

When a semipermeable membrane, permeable to water but not to dissolved solids, is placed between a concentrated solution and a dilute solution, water diffuses through the membrane into the more concentrated solution. When pressure is applied to the more concentrated solution, this flow of water can be retarded or even reversed.

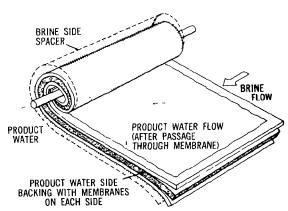


Fig 3 Spiral membrane module

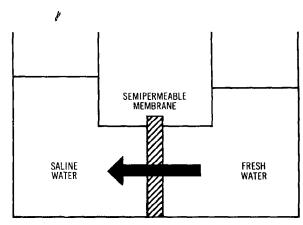


Fig 1 Osmosis - Normal flow from low to high concentration

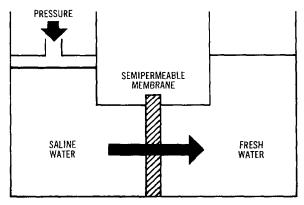


Fig 2 Reverse Osmosis -- Flow reversed by application of pressure to high concentration solution

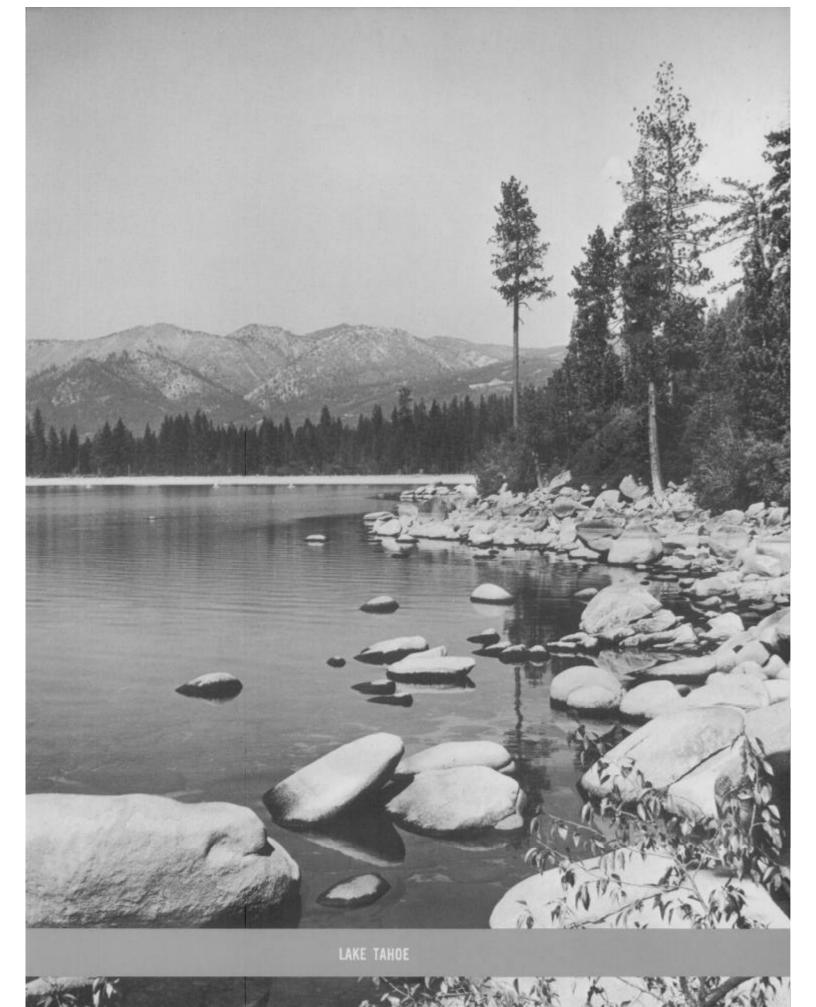
The development and packaging of special membrane material is crucial to the practical success of reverse osmosis. The approach to the reverse osmosis process is centered around the use of a compact, spiral-wound membrane module. With this design, several hundred square feet of membrane surface area can be accommodated in one cubic foot of pressure vessel volume, minimizing unit sizes and costs

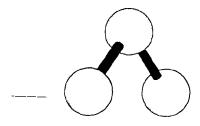
## Research at the University of California

The University of California has continued its research program to develop new methods for the conversion of brackish and ocean waters. Of particular interest during the past two years has been the testing of a large laboratory model at Coalinga of the reverse osmosis process. The plant has generally exceeded initial expectations. The life of the one inch tubes used has been good, having lasted more than one year compared to the anticipated six month period. The membranes themselves have been improved and in January the experiment was considered by the University to be a success.

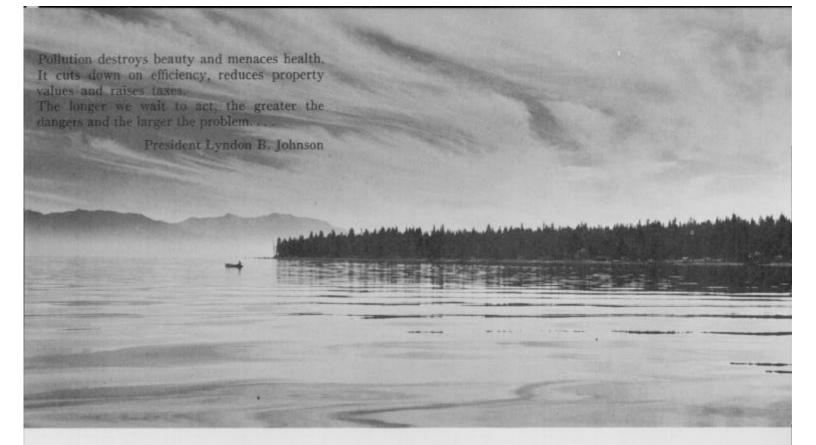
Work is presently underway to test two inch tubes at Coalinga after which consideration will be given to the possibility of testing the process on sea water. The Coalinga test has demonstrated the feasibility of the reverse osmosis process on waters of medium salinity but an evaluation of its competitiveness with other processes has not been made.

Negotiations are underway by the University and the Office of Saline Water to solve a number of difficult patent problems on the reverse osmosis process and other equipment





 $New\ Horizons\ in\ California\ Water\ Development$ 



# III

# Water Quality Control

# Background

The final section of this report will discuss the third major element in proper management and control of our water supplies, that of water pollution and water quality control. Nationwide it has become obvious that the protection of water supplies from pollution through water quality control programs must receive top priority in water resources development.

Fortunately, in California, vigorous action to control water pollution came early. After extensive legislative study the State Water Quality Control Act (Dickey Act) was enacted by the Legislature in 1949. An immediate program of pollution clean-up was undertaken by the nine Regional Water Pollution Control Boards established by the Act.

Since that time remarkable progress has been made in cleaning up California waters and keeping them clean through the construction of water pollution control works by municipalities, public districts and other public agencies, together with the installation of waste treatment facilities by business and industry.

Thus, early efforts in this regard have resulted in the problem now being much less serious here than in many other areas of the United States, which have lagged considerably behind in water pollution control.

This was indicated by a recent nationwide public opinion poll in which the question was asked whether or not the lakes, streams and rivers of the area were polluted. In the Eastern United States almost three-fourths of the persons contacted felt that the waters were polluted "a lot". However, the response in the Western United States was in marked contrast with only a little more than one-third answering this question in the affirmative. Four times as many westerners as easterners felt that there was only a little or no pollution at all in their areas.

As experience with the early phases of our water pollution control program developed, it became apparent that enforcement procedures of the law had deficiencies. After further legislative study major changes in the water pollution control law were enacted by the Legislature in 1959 and since that time more than 4,000 waste discharge rquirements have been established by nine regional boards.

Since 1949 more has been accomplished in water pollution control in California than in all the preceding years The amount spent by dischargers for pollution control facilities during this period is well over \$1 billion. This includes several thousand industrial waste treatment plants and 775 community treatment plants. Of the 16 million people now served by community sewerage systems in California, less than one-tenth of one percent are without sewage treatment. The few small communities discharging raw sewage will soon join those with treatment facilities 1

Since 1959 emphasis has gradually changed from the narrower concept of pollution to the broader concept of water quality control The Legislature responded by granting broad water quality control policy authority to the State Board in 1963 and to the Regional Boards in 1965

Concurrent with California's recent increased emphasis on water pollution and water quality have been major efforts by other states and, in particular, by the federal government. The Congress has responded to the pollution challenge by enacting legislation requiring establishment of water quality objectives by all states for interstate waters and by pumping billions of dollars of federal financial assistance into state and local water quality control programs.

As a result of these efforts, it is generally agreed that the State of California has the finest water pollution control program in the nation As Secretary of the Interior Udall indicated recently,

No other state has finer pollution control regulation and procedures.

No other state does more to protect the quality of its waters

California is out ahead in nearly every aspect of water management. It is out ahead in planning, and out ahead in action It is out ahead in construction and it is out ahead in exploring far frontiers of knowledge in water conservation 2

Although California does have an excellent water pollution control record, the rapid growth of our State requires greater emphasis on water pollution and water quality control and there are several areas in the state in urgent need of major water pollution control efforts. Two of the most important problems are protection of Lake Tahoe and the development of the master plan for pollution control in the San Francisco Bay-Delta area Another area in need of immediate attention and study is Clear Lake. Special programs for San Francisco Bay and Lake Tahoe were developed by the Legislature in recent years and are discussed below

The key to effectiveness of any water pollution control program is the ability to provide physical facilities to treat wastes. Regulations, policies, and enforcement of requirements are not enough if municipalities and industries do not construct adequate treatment facilities Construction requires bond issues and generation of local support to abate pollution Remarkably successful examples in California in this regard have been numerous. The \$50 million San Diego Metropolitan sewerage system is an outstanding example of community leadership in coordination with the Regional Board serving the area.

Statement of Resources Agency Administrator to President's Water Pollution Control Advisory Board, San Diego, April 22, 1966 <sup>2</sup> Statement at dedication of Sunol Filtration Plant, San Francisco, October 15, 1966

The prevention of pollution of water supplies for municipal, domestic and agricultural use is, of course, only one purpose of a fully successful pollution control program. Our recreation, our fish and wildlife resources and our state's natural beauty also must be preserved as California strives to improve its water pollution and water quality control programs.

In the report that follows the Committee will discuss a number of areas concerning water pollution in which further action is needed now.

### Lake Tahoe

The Lake Tahoe area pollution problem involves both the North Shore area and the South Shore area of the Lake, including development in Nevada and California.<sup>3</sup> (See map, page 44)

At the present time both areas use two principal methods of sewage disposal: 1) direct discharges into the underground through cesspools and septic tanks, and 2) collection through a sewerage system, treatment, and land disposal within the Basin. Neither method of sewage disposal eliminates the presence in the effluent of nitrates and phosphates. These two elements cannot be completely removed even by the most advanced waste treatment plant in the world, the tertiary treatment plant of the South Tahoe Public Utility District It is these nutrients which cause the growth of algae in the Lake, and which, if not prevented from reaching the Lake, will eventually destroy the alpine-blue color of the Lake through the process of eutrophication, which is the process of the gradual aging and discoloration of a lake

Although the growth of algae in the Lake is the principal pollution problem, there are other problems such as those resulting from land developments on the shore

Virtually all authorities have concluded that removal of as much sewage as possible from the Lake Tahoe Basin is essential. The enforcement conference held at Lake Tahoe by the Federal Water Pollution Control Administration in July, 1966, was the latest statement of the need for export. At that meeting Federal and State officials agreed that Lake Tahoe is not polluted in the usual sense of the word in that there are no direct discharges of untreated sewage into Lake Tahoe today. However, the phosphates and nitrates which are not filtered out during sewage treatment still get into the Lake. While they may be of insignificant consequence in some water bodies, they will eventually cause irreparable damage in Lake Tahoe. It is essential for the maintenance of the beauty of the Lake, for the economy of the area and the welfare of the people using the area, that these nutrients not enter the Lake. In lieu of development of facilities to remove these nutrients from the effluent, the problem is to finance the special export facilities required. Export outside the drainage area of the Lake is the only guarantee at present that these nutrients cannot seep back into the Lake from land disposal as they do today.

### Prior Legislation

During the 1965 Session of the Legislature attention was concentrated on the South Shore area. A state loan <sup>4</sup> from the General Fund of \$1.8 million was authorized to the South Tahoe Public Utility District to build the facilities then estimated to be needed for export from the Lake. It was expected then that this loan, together with local funds would be sufficient. The 1965 legislation also created the Sanitation Authority Act,<sup>5</sup> an enabling act for local creation of sanitary authorities. At the same time, the Legislature also created the Lake Tahoe Joint Study Committee,<sup>6</sup> composed of representatives from both California and Nevada to develop plans for a bi-state entity to provide effective governmental action to control many problems involved in the urban development of the Lake area. This Committee will report to the 1967 Legislature.

<sup>&</sup>lt;sup>3</sup> A short history of pollution problems at the Lake, The Pollution of Lake Tahoe, November, 1965, is included in the Committee's Staff Report See also the report of Engineering Science, Inc., Lake Tahoe Disposal Study, 1962-63, prepared for the Lake Tahoe Area Council An interesting short study is Carl Praster and Cameron Wolfe, Jr., "Lake Tahoe The Future of a Natural Asset, Land use, water, and pollution," 52 California Law Review, 563 (August, 1964)

<sup>4</sup> SB 1149 (Lunardi) 5 Division 22, Water Code, AB 2618 (Chappie)

### The 1966 Legislative Action Program

The thrust of the Lake Tahoe Program which was enacted at the 1966 Session was two-fold: First, to provide financing for export projects; Second, to provide new laws to make effective the full sewering of Lake Tahoe.

South Shore Area

### South Tahoe Public Utility District (California)

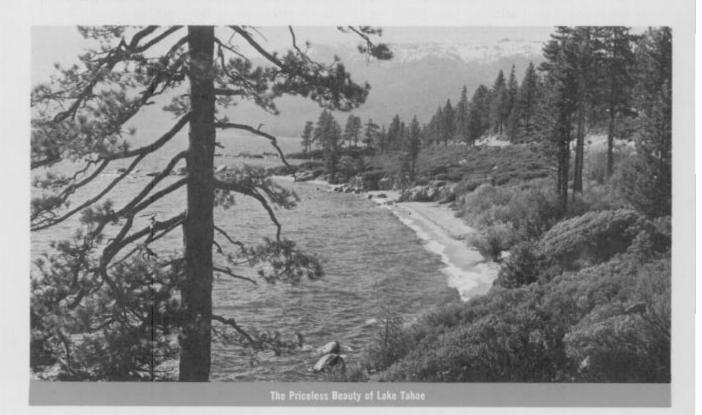
Until the Legislative Action Program was developed, there were two major obstructions to the construction of the South Tahoe export line; 1) the procurement of a suitable disposal area for the treated effluent outside the Basin, and 2) the financing of the expensive facilities needed.

The South Tahoe Public Utility District, serving the South Tahoe area, developed a number of plans for alternative export lines outside the Basin. However, none of the proposed export sites was satisfactory to the areas receiving the effluent.

In the fall of 1965 the South Tahoe Public Utility District announced the proposed discharge would be made into Hope Valley in Alpine County. This proposal met the nearly unanimous disapproval of the people of Alpine County who preferred a discharge site in another area of the County. The County of Alpine responded to the proposal by enacting three ordinances <sup>7</sup> to thwart the district plan. One ordinance would have prohibited discharges from any sewer system serving more than 3,000 persons and originating outside the county. A second would have prohibited all discharges except in selected portions of Alpine County, including Hope Valley. The third ordinance established the County Board of Supervisors as a Water Quality Control Board with powers similar to those of Regional Water Quality Control Boards.

Following this action Chairman Porter requested an opinion on the validity of the ordinances from the Attorney General. On February 8, 1966, the Attorney General beld that "the Water Quality Control

<sup>1</sup> Nos. 255, 256, 257. <sup>8</sup> Opinion No. 65-306.



Act does not preclude county officials from adopting and enforcing regulations, in addition to discharge requirements of the Regional Water Quality Control Boards, from imposing further conditions, restrictions, or limitations, not in conflict with the requirements of the regional boards". As a result of this conclusion the ordinance establishing the County as a Water Quality Control Board and the ordinance prohibiting waste discharges in certain portions of the county, including Hope Valley were valid. The Attorney General held that the third ordinance flatly prohibiting discharge of wastes originating outside the county was unreasonable and, therefore, invalid. The Attorney General relied upon the provisions of the State Water Quality Control Act providing that "no provision of this division or any wording of the State Water Quality Control Board or Regional Water Quality Control Board is a limitation: a) on the power of a city or a county to adopt and enforce additional regulations not in conflict therewith imposing further conditions, restrictions, or limitations with respect to the disposal of sewage and industrial waste or any other activity which might result in the pollution of water, b) on the power of any city or county to declare, prohibit and abate nuisances." As a result of negotiations initiated by the members of the Committee from the area involved agreement was reached with officials of Alpine County in early 1966 for disposal of South Lake Tahoe sewage in Alpine County near Diamond Valley, a disposal site compatible with the Alpine ordinances. This agreement was the major breakthrough which made possible the action now being taken on an export program for the South portion of the Lake

Following the general agreement with Alpine County, the way was clear for the South Tahoe Public Utility District to embark upon an export program, including a 29-mile export line over Luther Pass to Alpine County, enlargement of its tertiary treatment plant capacity and other system improvements

The export line from the treatment plant to the summit of Luther Pass is now under construction and will be completed prior to September, 1967. Additions to the treatment plant to increase the capacity of the plant from 2.5 to 7.5 million gallons per day including primary, secondary and tertiary treatment are also under construction

From Luther Pass to Diamond Valley in Alpine County the pipeline will have a design capacity of 15 million gallons per day. Construction of this portion of the line will also be completed by September, 1967.

At the terminus of the pipeline the district will construct the *Indian Creek Dam and Reservoir*. The 3,500 acre foot facility, to be located  $3\frac{1}{2}$  miles east of Woodfords, will be an 860 foot long rock and earth fill structure 63 feet high above stream bed The reservoir will have a maximum surface area of 165 acres

The project will provide one of the first comprehensive uses of reclaimed and purified waste waters for recreation and will mark a pioneer accomplishment in waste water reclamation. Few, if any other areas have natural beauty such as Lake Tahoe that requires such advanced waste treatment and complete export.

The service area of the South Tahoe District currently is approximately 10,000 acres, half of which are now sewered. The district anticipates developing basic trunk sewers and pumping stations necessary to serve the remainder of its area. The existing District sewerage system includes over 170 miles of sewers, serving 4,500 acres, and representing about 15,000 equivalent residential lots. Approximately 60% of the existing single family residences and mobile homes are now connected to the District system. During 1967 all developed areas served by the existing system will be connected. The growth of the Lake Tahoe area is reflected in the quantities of sewage treated by the District and the quantity of wastes estimated to be treated through the year 2000. In 1962 the total sewage treated was 374 million gallons. In 1966 that total had risen to 800 million gallons. It is expected to reach 2 billion gallons a year in 1980 and 3 8 billion gallons in the year 2000.

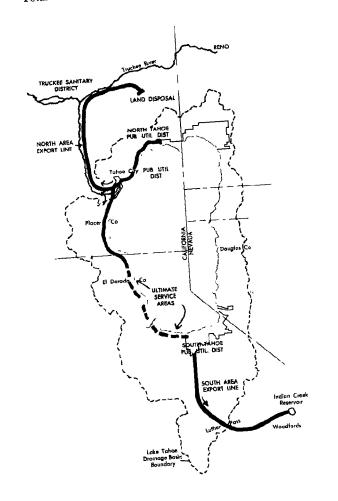
Although the current treatment plant expansion will be adequate for a decade, additional expansion will be needed between 1975 and 1980

Table III

Financial Summary

South Tahoe Public Utility District Project

South Tahoe Public	Utility District Hojest	Cost
El Dorado County	Fmancing	\$3,200,000 2,092,000
Treatment Plant enlargement		,
Export line to Luther Pass	\$1,650,000	
Financing District Bonds Grant-Federal Water Pollution (PL-753)	500,000	
Grant-Federal Water PL-753) Control Administration (PL-753) Grant-Federal Economic Development Administration	3,253,000 \$5,403,000	\$5,292,000
Total		\$1,700,000
Alpine County Pipeline to Indian Creek Reservoir (est) Indian Creek Dam and Reservoir (est)		1,600,000
	\$1,800,000	
Financing State Loan Grant-Federal Water Pollution Control Administration (PL-660, 30%)	990,000	\$3,300,000
Total	\$2,790,000	



Proposed
Sewage
Export
Systems
for
California

To finance the district program, SB 17 (Porter-Teale, 1966 First Extraordinary Session) reauthorized the \$1.8 million loan originally enacted in 1965 which would have expired in April, 1966, if the extension had not been granted This legislation required that the loan proceeds are to be used exclusively for the Alpine portion of the export line to assure its construction. The bill also specified that the terminus be at Diamond Valley, the location suitable to Alpine County.

As can be seen from Table III (page 44) financing is not complete on the Alpine County portion of the project. The District hopes to obtain necessary federal funding of onshore recreation facilities at the Indian Creek Dam and Reservoir This, in turn will make the project eligible for a Davis-Grunsky grant for part of the construction costs of the terminal dam and reservoir

The total estimated cost of the project is now \$8.5 million. This is an increase of more than \$2 million over the estimate of January, 1966. Part of the increase has come from an escalation in construction costs attributable to inflation. As a result of the increase the District has committed an additional \$500,000 in bonds, bringing the total of district bonds to more han \$1.5 million.

The great state and national interest in preservation of the beauty of the Lake has been frequently discussed. The Lake has been termed a "national asset". The responsibility for its preservation rests with the state and federal governments as well as with local county and municipal governments.

In view of the urgent need for successful completion of the Lake Tahoe Project, the Committee recommends that the Legislature take all possible steps to assure the completion of the Project including the dedication of additional state funds \* necessary to complete the project on schedule The Committee believes that the solution of the Lake Tahoe water pollution problem by complete export is one of the most significant pollution control developments in the history of the State, and is absolutely essential if we are to preserve for future generations the priceless beauty of Lake Tahoe

The second thrust of the legislative action program, that is, the complete sewering of the Lake, was embodied in SB 22 (Porter-Teale, 1966, First Extraordinary Session). This bill required that all unsewered septic tanks, cess pools, and other means of local sewage disposal within the Lake Tahoe Basin be abandoned as soon as 1) a local sewage system has been constructed and, 2) export facilities are available This bill applies to both the North and South Shore areas within California. It will guarantee that the entire Lake will eventually be completely sewered so that no local discharges will remain to permit nutrients to reach the Lake

# Douglas County Sewer Improvement District (Nevada)

Since 1953, the South Tahoe Public Utility District, under contract with the Douglas County Sewer Improvement District No 1, has provided sewer treatment and disposal for the area in Nevada located adjacent to the California-Nevada Stateline

In 1965 the Douglas County District entered into an agreement with the Round Hill General Improvement District in Douglas County, Nevada, to provide a joint sewage collection treatment and export system which will be located entirely within the State of Nevada The export system includes pumping facilities and a 50 million gallon reservoir. The capacity of the facilities will be 3 million gallons per day with future expansion to six million gallons per day

Sewage collected in both the Round Hill District and the Douglas County District will be treated in a plant located near Round Hill and will be exported over Dagget Pass and discharged into an unnamed tributary of Dagget Creek where it will flow by gravity to a point of discharge in the Carson River

The financing of the project, which is now under construction and will cost \$6 million, is as follows:

Douglas County Sewer Improvement District No 1 \$3,000,000 (general obligation bonds) Round Hill General Improvement District \$1,500,000 (special assessment bonds) Federal Water Pollution Control Administration (PL 660) \$1,500,000

The Nevada Districts contemplate adding additional areas within Douglas County and in the Lake Tahoe Basin to the service area of the existing districts. It is estimated that the 600,000 gallons per

\* Mr Collier concurs in this recommendation provided such assistance is in the form of a loan

day average flow at the present time will increase to 750,000 in 1968 and by 1980 the average summer flow will be 3 million gallons per day, at which time expansion to 6 million gallons per day is anticipated. This capacity should be adequate for the district through the year 2000.

North Shore Area

Tahoe City and North Tahoe Public Utility Districts (California)

Concurrent with the development of an export program for the South Shore of Lake Tahoe two districts serving the North Shore area have joined together in a joint export project for that area. The Project includes the North Tahoe Public Utility District and the Tahoe City Public Utility District with service areas that are located within the Tahoe Basin. A third district, the Truckee Sanitary District may also join although it has a service area which is outside of the Lake Tahoe Basin

The Tahoe City and North Tahoe Districts have together developed a basic export program which will cost nearly \$16 million. The regional sewage plan for the North Shore will bring all wastes to Tahoe City where wastes will be conveyed by gravity along the Truckee River to a point downstream from Truckee where the wastes will be treated.

Effluent from the treatment plant would be pumped to land disposal areas above the treatment plant, which are located outside the Lake Tahoe Basin. Effluent would percolate from that point into the ground, eventually returning to the Truckee River. Although downstream water users in Nevada have vigorously protested the project, California and Nevada pollution and public health experts are unanimous in their findings that the project will not adversely affect these users (which include Reno, Sparks and other Nevada cities).

The ultimate population of the area to be served by the project is 220,000 and a staged development has been scheduled. The following table indicates the cost to each District of phase 1 of the Project

	North Tahoe and Tahoe City P (Phase		
Year	North Tahoe	Tahoe City	Total
1967	\$2,000,000	\$925,000	\$2,925,000
1968	1,000,000	2,600,000	3,600,000
1969	1,000,000	1,600,000	2,600,000
1970	1,000,000	1,700,000	2,700,000
1971	930,000	1,650,000	2,580,000
	\$5,930,000	\$8,475,000	\$14,405,000

Financing of the Project was aided by an initial state loan of \$2 million available in the 1967-68 fiscal year. This bill was another part of the Legislative Action Program for Lake Tahoe. As a condition of receiving the loan the Legislature required that all areas within the service area of the two districts be annexed to one of the two districts in order to provide complete coverage of the North Shore area within California. The legislation described in the previous section of this report (SB 22) mandating connection to sewers whenever facilities are available applies to the North Shore area as well as to the South Shore area

The following table shows the ultimate disposal requirements of the North Tahoe Public District and Tahoe City Public Utility District.

	North Shore Sewage Dispe	osal Requirements			
(gallons per day)					
Year	North Tahoc	Tahoc City	Total		
1966	500,000	170,000	670,000		
1980	3.500.000	5 000,000	8,500,000		

To date financing of the program includes \$2.9 million in bond issues already approved overwhelmingly by voters of both the Tahoe City Public Utility District and the North Tahoe District. The present uncommitted bonding capacity of the two districts is approximately \$2.3 million. Together with the State loan of \$2 million, it can be seen, however, that considerable additional funds will be required to complete the Project.

<sup>\*</sup>SB 98 (Teale) and SB 107 (Teale)

One major source of additional financing for this Project will be Federal Public Law 660, as amended in 1966 The amount of federal funds available for the project would have been extremely limited under the previous law since no individual project could receive a grant of more than \$1.2 million. It is now anticipated that a full 30% of the total construction costs will be available from the Federal Government since the maximum was removed by Congress in 1966 These additional funds will narrow the gap between available and needed funds for this Project.

The Committee believes, however, that there is an urgent need for export from the North Shore area and recommends that the Legislature in the future may need to provide additional state financing of export facilities to assure the success of this project in order that the total sewering of the Lake and export of all wastes can be achieved.

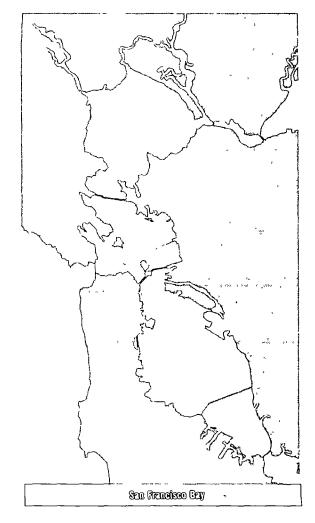
## San Francisco Bay-Delta Study

In its December 1964 report <sup>10</sup> the Water Committee Subcommittee on Water Pollution evaluated the need for an extensive study of the water quality problems in the San Francisco Bay and the relationship of the proposed San Joaquin Valley Master Drainage System to such bay area problems now and in the future. The subcommittee recommend an extended study of the entire problem area in order to determine the effects of and the best solution to any problems which might occur both from the discharge of San Joaquin Valley waste waters and the continued increase in waste discharges from the San Francisco Bay area itself

During the 1965 General Session, the Legislature enacted AB 2380 (Porter) <sup>11</sup> which authorized a study of the above problems and represents bold action by the state to comprehensively plan to meet problems before they become acute The area involved in the study represents nearly 40% of California's land area. The development of a pollution control program for it is essential to the future of the entire state. Like Lake Tahoe, the Bay is one of California's great natural assets. The adjacent Delta and Valley areas include major industrial complexes and some of the State's richest and most productive agricultural land.

The objective of the 3-year study is to recommend a comprehensive program for regional waste collection, treatment and disposal for the entire area, including recommendations for construction and financing of the Master plan and provision for a governmental entity to operate it.

The Committee was convinced from its work that the study should be made by the State Water Quality Control Board Other prospective state agencies which might have made the study, such as the Department of Water Resources, had a direct interest in the construction of the San Joaquin Valley Master Drain or else did not have the broad responsibilities for water pollution and water quality control that the State Water Quality Control Board possesses Although there was considerable discussion and some opposition among state agencies to authorizing the study by the State Board, the Committee firmly concluded that the State Board was the proper agency to perform the study.



\* M1 Collies concurs in this recommendation provided such assistance is in the form of a loan 19 Assembly Interim Committee Reports, Vol. 26, No. 11

<sup>11</sup> Chapter 1351, Statutes of 1965

Accordingly, AB 2380 authorized the State Board to undertake the study.<sup>12</sup>

In view of the broad interest in the Bay-Delta study and the responsibilities of numerous federal, state and local agencies, a complex mechanism was provided in AB 2380 to assure consultation with the interested agencies and to enlist their assistance and cooperation whenever possible. In particular, the bill sought to encourage local government to carry out its full responsibilities by providing for local study of the waste collection and treatment facilities needed to tie in with the master system to be studied under AB 2380 The bill also required an emphasis on the possibilities of utilizing waste water reclamation in the Plan.

In February of 1966, the State Water Quality Control Board reported to the Legislature its findings on the scope and details of the proposed study and the Legislature appropriated \$1,078,000 for the study for fiscal year 1966–67 Because the February 1966 report of the state board and other information available from interested state and local agencies did not provide assurances that full coordination among all agencies would be effected, the Legislature added limiting language to the above appropriation requiring that any contract expenditure exceeding \$10,000 in amount should be certified by the Resources Agency Administrator and concurred in by the Director of Finance, with a copy furnished to the Joint Legislative Budget Committee (Legislative Analyst), that optimum coordination with all agencies of government had been accomplished.

In July, 1966, the State Board selected a Project Director for the study and at this time he has nearly completed recruiting a staff. However, not until the fall of 1966 was substantial work on the study undertaken Although delays in approving the Budget Act of 1966 were partially responsible for setting back the starting date for the study, considerable interagency discussion and disagreement on administrative details further delayed initiation of the project As a result, not until November 3, 1966, did the State Board appoint Kaiser Engineers as the master contractor for the program An interim contract of \$25,000 was signed with Kaiser Engineers to enable that firm and its associated contractors and consultants to begin structuring the management system for the program, to develop detailed work plans and estimates of costs for work to be done as well as development of a plan for optimum coordination of the work with other governmental organizations. In theory, this was to have been accomplished by the report of the State Board issued in February 1966

To date, it is still uncertain how the details of the Bay-Delta study will be fully coordinated with the various interested federal, state and local agencies of government. Until such details are developed, the Committee cannot be certain that the original objectives of AB 2380 are being met. Meanwhile, it appears that the State Board is proceeding along the general lines prescribed in AB 2380 with the type of investigation and execution of work contracts contemplated by AB 2380 but that for various reasons nearly a year's delay has occurred in getting the detailed work underway.

In making the above evaluation, the Committee is aware of the serious problems confronting the State Board in securing agreement and making program decisions. The fundamental problems confronting the State Board are outlined more fully in the Committee's report recommending the creation of a State Water Resources Control Board. Under a smaller, full-time board, consisting of members without primary allegiance to other departments, the direction of a study such as the Bay-Delta investigation could proceed more effectively and expeditiously than has been the case to date.

The State Board will present a progress report to the Legislature in January which will more fully discuss the details of the work and the progress made

In addition, it has been noted that under Section 3 (c)(1) and Section 5 (a)(2) of the Federal Water Pollution Control Act, as amended in 1966,<sup>13</sup> the Bay-Delta Study appears to qualify for federal financial assistance. The Committee recommends that the state fully explore these possibilities before requesting additional state appropriations

<sup>&</sup>lt;sup>12</sup> The Legislature appropriated \$100,000 from the General Fund (to which was added \$70,000 in federal money) for initial work in outlining the scope and the contents of the study

### Water Resources Control Board

On November 17, 1966, the Committee held a hearing on the Assembly Water Committee Staff Study entitled A Proposed Water Resources Control Board for California This study (dated July 1966) was released by the Committee for public discussion The study proposed the creation of a new agency, a "Water Resources Control Board," which would consolidate the existing independent State Water Rights Board with the State Water Quality Control Board and add the functions of Supervision of Safety of Dams and the Watermaster Service Administration, both functions of which are now in the Department of Water Resources The Regional Water Quality Control Boards would remain unchanged

The hearing on the Water Resources Control Board indicated strong and virtually unanimous support for the proposed consolidation of the State Water Rights Board with the State Water Quality Control Board One of the most significant criticisms of the proposal, as will be noted later, came from witnesses who did not believe the proposal included as extensive a reorganization as their thinking indicated might be appropriate In addition, several witnesses indicated reservations or tentative positions of opposition to the proposed transfer of the Supervision of Safety of Dams and the Watermaster Services Administration from the Department of Water Resources to the new board Therefore, the Committee proposes the following modifications to the staff study:

- 1 The Administrator of the Resources Agency opposed direct control of the executive officer and the board staff by the proposed board Instead, he proposed that the executive officer and the staff be responsible to the line of supervision emanating from the Governor's Office The Committee could not determine how such a relationship would work in practice and most other witnesses including representatives of the Little Hoover Commission indicated that it would be preferable to have the executive officer and the staff fully responsible to the board. The Committee concurs with this view
- 2 The Committee's attention was called to several instances in which the report refers only to the State Water Quality Control Board and does not specifically mention the Regional Boards. In general, the reference to the State Board was intended to include by inference the Regional Boards Therefore, the concern of various witnesses that the proposed Water Resources Control Board would downgrade the role of the Regional Boards is largely a problem of semantics and such a view does not represent the intent of the report. For example, the proposed amendment to Section 13003 of the Water Code, as set forth at the bottom of page 59 in the Appendix to the staff study states, "It is the intent of the Legislature that the State Water Resources Control Board and each Regional Water Quality Control Board shall be the primary state agencies in the field of water pollution and water quality control." This proposed amendment to the Water Code specifies the relationship proposed and the text of the staff study should be read in this context.
- 3 The organization chart on page 38 of the staff study shows the Regional Water Quality Control Boards in a subordinate position to the Division of Water Quality Control and the executive officer. This relationship is not the equivalent of the somewhat similar designation shown for the proposed Division of Safety of Dams and the Division of Water Rights and their respective Los Angeles offices In the latter two cases, the Los Angeles offices are entirely subordinate to the division. In the case of the Regional Water Quality Control Boards, the relationship does not subordinate decisions on program and policy but rather is intended to show the existing relationship in the Water Code under which certain administrative and budgetary functions of the individual regional boards are consolidated and managed by the staff of the State Water Quality Control Board in Sacramento in order that a unified administrative entity may exist.

The Committee contemplates no change in the substantive relationship between the Regional Boards and the new State Water Resources Control Board from that already existing in the Water Code between the Regional Boards and the State Water Quality Control Board. A revision of the organization chart will be made to show a more direct relationship between the regional boards and the new State Water Resources Control Board while the relationship to the Division of Water Quality Control will be a dotted rather than a solid line.

- Questions have been raised about the possible field unification of activities involving water quality, water pollution and water rights This Committee recognizes that such relationships may develop and that some revision of field organization might be appropriate in the future. The possible future field relationships are not clear at this time and the Committee believes that the Board should have some operating experience before trying to specify them and welcomes recommendations from the new State Water Resources Control Board and others
- The Resources Agency Administrator proposed that the Legislature establish an Environmental Resources Control Board instead of the State Water Resources Control Board Such a proposal goes beyond that contemplated at present by the Committee, and in the sense that it involves air pollution and other functions which are not the responsibility of the Assembly Water Committee, is beyond the jurisdiction of the Committee. The Committee believes that the proposed Water Resources Control Board provides an appropriate and complete relationship between water quality and water quantity
- 6. The League of California Cities and the Eel River Association advanced concepts of a broader organization which might include the establishment of a line department including all aspects of water quality work, whether currently performed by the Department of Public Health, the Department of Fish and Game, the Department of Water Resources or the State Water Quality Control Board Such proposals go considerably beyond the present study by the Committee and contemplate new concepts which were only tentatively advanced by the witnesses and which have not been considered in detail by the Little Hoover Commission, the Committee and other

The proposal by the League of California Cities for consolidation of water quality functions in a line department is based largely on the study by Water Resources Engineers, Inc 1 The Committee reviewed this report during the 1963-64 interim and published its conclusions in December, 1964. The Committee found that one of the most important elements considered in the Water Resources Engineers Study was the need for coordinated handling of water quality data and the development of a common program framework for budgeting water quality investigations and related work The Resources Agency Administrator had indicated in 1964 that he planned to pool data processing and develop within the Resources Agency a common framework for water quality control activities. On page 60 of the Subcommittee report there was included a request for a brief memorandum report from the administrator every six months to detail progress being made in this direction Such reports have not been received and to date the Committee is unaware of any progress being made in this direction. The implementation of such coordination is essential for economy in the conduct of the state's water quality work Simultaneously the type of information which can be secured from such coordination could be a major step in the direction of implementing the views of the League of California Cities as well as providing a basis for further consideration of their proposal

7 Local agencies participating in the Watermaster Services Administration function in Southern California questioned whether the reorganization would provide for continuity of personnel performing the functions and whether increased costs for double overhead from both the Department of Water Resources and the new Water Resources Control Board would be charged to them The Committee's draft legislation would transfer the entire function to the new Water Resources Control Board This would include personnel and should require only the substitution of the Water Resources Control Board's overhead costs for the overhead costs of the Department of Water Resources The Committee has asked the State Water Rights Board to compute

<sup>&</sup>lt;sup>1</sup> An Interagency System for Water Quality Management, November 30, 1962 <sup>2</sup> Reports of Subcommittee on Water Pollution, Assembly Interim Committee Reports, Volume 26, No. 11

the possible overhead costs for the proposed new board based on the functions which the Committee has proposed. The data are not yet available but it would appear that the overhead costs of the new board, when spread over the new activities of the board, should *not* increase costs for watermaster service. A definitive conclusion on this point is not available at present.

8. Several witnesses tentatively proposed that the function of Supervision of Safety of Dams be retained in the Department of Water Resources, or suggested a need for more limited change. The Department of Water Resources strongly opposed its transfer Considerable testimony of the above witnesses centered on the engineering nature of the work involved and questioned whether the proposed board would be in a position to decide the complex engineering matters involved in the supervision of safety of dams. The role of the new board is not contemplated to include making decisions on detailed and complex engineering matters. It is the role of the proposed board to review and provide a forum for public discussion of the policies involved in the supervision of safety of dams.

The public, at present, is generally unaware of the policy problems which the Department of Water Resources' engineers must now decide based on their best judgment, on their views and skilled knowledge of the technical problems involved and the probable public reaction to any possible hazards or risks. Customarily, the owners and constructors of dams arrive at an agreement with the department's engineers on differences of opinion regarding safety matters. The department's engineers of course always retain the right to exercise the state's police authority and to forbid construction practices or to deny approval for designs which it concludes are unsafe. However, under the present methods of operation, the real parties at interest, that is the persons living downstream from the project or who work or own property in an area subject to the possibility of damage from the failure of a dam, are generally unaware of the problems and are represented only through the ability of the department's engineers to anticipate their possible concerns

One of the advantages to be achieved by transferring the supervision of safety of dams to the proposed Water Resources Control Board is that more public awareness and public attention to the hazards involved in construction of projects could be obtained In addition, a forum could be provided for the real parties at interest downstream from the project to make their views known with regard to any possible hazards.

Possible conflicts of interest within the Department of Water Resources could occur from the construction of projects by the department which the supervision of safety of dams personnel must approve. There is no evidence that this possible conflict has created any major problems although difficulties have occurred The delegation of authority from the director to the Supervision of Safety of Dams function for approval of departmental projects does not necessarily provide the safeguards which are implied by the department since personnel in the supervision for safety of dams function in all other respects are directly responsible to, and supervised by, the department's chief engineer.

In the final analysis, the real authority lies in the Director of Water Resources who can require both the chief engineer and the supervision of safety of dams personnel to undertake hazardous activities if he should desire. The transfer of the director's authority to the Resources Agency Administrator or even to the Governor would not fully eliminate the problem but would only make any possible conflict more remote from the ultimate decision maker. There is, of course, no reason to believe that the department is any less interested in the safety of dams than other state employees or boards. On the contrary, the department must assume full responsibility for failure of their own projects whereas it assumes no responsibility for the failure of other projects.

Alternatives to the proposed transfer may exist. It is possible that a revision in procedures in the Water Code could improve the supervision of safety of dams function by adding staff hearings or notice of possible hazards. It is also possible that the California Water Commission could be given authority to hold hearings or to approve after public hearings certain actions which involve possible hazardous conditions. The Committee recommends that further consideration be given to this matter and that those witnesses who presented tentative testimony to the Committee give the problem further and more definitive analysis in the light of the discussion above

The Committee concludes that the rationale for the proper organizational placement of the supervision of safety of dams function either in the Water Resources Control Board or its retention in the department is still incompletely developed. Under these circumstances, the public interest would seem to control and to suggest transfer of the function to the new board pending any other suggestions for improvement in order that more public attention and awareness of the hazards as well as an opportunity for public hearings could be provided

In summary, the Committee concludes that strong support exists for the organization of a Water Resources Control Board and recommends its adoption by the Legislature \*

## The Need for Legislation Amending The State Water Quality Control Act

The Committee conducted a thorough study of the State Water Quality Control Law during the interim to determine what changes, if any, are necessary for California to meet the additional obligations of recent federal legislation and in order to bring the State up-to-date in order that California can continue to lead the nation in the control of water pollution

In a response to a request from the Committee in July, 1966, the Administrator of Resources developed a 16 point legislative program which aimed primarily at enforcement provisions of the State Water Quality Control Law. Much of the program developed was based upon the State's experience at Lake Tahoe

The Committee carefully reviewed the Administrator's proposals at a hearing held on November 16, 1966, and agrees that some of the changes in the Water Quality Control Law are necessary at this time. The existing procedures are, however, generally satisfactory when one considers the basic features of our program and the Committee does not believe that evidence or testimony shows that a major overhaul is warranted at this time The Committee, however, does recommend action by the Legislature in the following areas

#### 1. Enforcement Procedures

The Committee received considerable testimony suggesting that enforcement procedures of the State Water Quality Control Act are cumbersome and slow In examining carefully the record of enforcement over the years, however, the Committee believes that while some changes in the enforcement procedure are necessary, the drastic modification suggested by the Administrator in establishing waste discharge requirements pursuant to the Administrative Procedure Act are unnecessary and, in fact, would hinder rather than improve enforcement

Since the State's aggressive enforcement program began in 1959, 4,360 discharge requirement orders were issued by the nine Regional Water Quality Control Boards. In only 20 cases was it necessary to issue a cease and desist order to stop violation of these requirements. Satisfactory settlement of these cases was achieved in most instances and there are only two cases where the State's petition for a court order to correct pollution has been denied. One of these denials involved the South Tahoe Public Utility District in which the condition complained of had been corrected prior to the final judgment. Therefore, there was no need for court action

The Committee believes that the existing entorcement procedures have been working well Problems do arise in the following situations, however

First, prompt enforcement is not always possible because of the occasional time consuming procedures involved in obtaining a cease and desist order prior to initiating court action. To correct this problem the Committee recommends that a Regional Board be authorized to dispense with the cease and desist order and go directly to court when, in its judgment, such action is imperative to prevent irreparable and immediate damage to the receiving waters. This recommendation should provide regional boards with sufficient flexibility to enable them to meet varying conditions.

<sup>\*</sup> Mrs. Davis concurs provided that the cost of water master service is reduced under the new board

Second, the current procedure of requiring court enforcement to be prosecuted by the local District Attorney often results in delay In addition, a number of District Attorneys have indicated that because of the frequent multi-county nature of pollution problems, the obligation of prosecuting such actions is an unreasonable burden on their counties

In order to provide additional flexibility, the Committee recommends that the Attorney General of California be authorized to prosecute court actions on behalf of regional boards upon a finding of the Regional Board when the local District Attorney is unwilling to do so As under existing law, if the local District Attorney undertakes such a prosecution but does not act diligently, the Attorney General would continue to have the authority to step in and prosecute the action under Government Code Section 12550 Third, the key to the Administrator's enforcement proposal was that any appeal either to the State Board or to the Court, over the validity of a waste discharge requirement, be initiated within a short period such as 30 days after establishment Thus, if at a future time a Regional Board undertook court action to prevent violation of a requirement, the court would have before it only the question of whether or not the requirement was being violated and would not be permitted to litigate the validity of the requirement

Many witnesses (including the State Water Quality Control Board) testified to the Committee that such a drastic action at this time is unnecessary and perhaps unwise. They agreed that more than likely such a change would cause a number of court actions at the time of initial establishment of requirements, while today such actions are not generally necessary. They also pointed out that changed conditions (in either the discharge or in the receiving waters) may have occurred between the time of original establishment of the requirements and the time of enforcement. This may require a reconsideration of the waste discharge requirements (either by the Board or the Court) prior to effective enforcement in any event. For these reasons the Committee cannot recommend adoption of the Administrator's proposed modification of the law

However, the Committee believes that two technical changes in the law will improve court enforcement procedures.¹ At the court enforcement proceedings there are two issues before the court: 1) Is the waste discharge requirement being violated? and 2) Is the waste discharge requirement reasonable? The Committee recommends first that the existing law be clarified so that when injunctive relief is sought by a regional water quality control board as a means of enforcing its discharge requirements, the validity and reasonableness of the discharge requirement will not be an issue, unless it is contested by the discharger If the discharger contests the validity or reasonableness of the discharge requirement, the burden of proving the discharge requirement invalid or unreasonable rests upon him and in the absence of his being able to persuade the court by a preponderance of the evidence that such requirement is invalid or unreasonable the injunction must be granted Of course, the board must prove first that the requirement was duly established and that the discharger actually violated it.

As under existing law, any changed conditions subsequent to establishment of the requirement will still result in full consideration by the court of the validity of the requirements and challenges to the validity of requirements would still be made at time of enforcement action. In addition, a court can always issue a temporary injunction pendente lite if litigation will be prolonged. This clarification should not alter the excellent current relationship between dischargers and the enforcement Boards, which is based largely on education, negotiation and persuasion

To further expedite enforcement, the Committee also recommends that the law be amended to require the court to decide an enforcement case promptly (within 30 days)

Fourth, the Administrator, the Department of Fish and Game and the Department of Public Health strongly supported the changes in enforcement discussed in the above paragraphs. One of the reasons for such strong support appeared to arise from the fact that the limitations imposed on the regional boards by the Water Code at present require them to act individually on each waste discharge. How-

<sup>1</sup> To review enforcement procedures 1) The Regional Board first establishes waste discharge requirements, 2) at any time, these may be protested by the discharger and an appeal taken to the State Board, 3) the decision of the State Board can be reviewed by a court upon request of the discharger, 4) later, if the Regional Board believes there is a violation of the requirement, the Board may issue a cease and desist order and then, if the violation continues, apply to a court for an injunction to stop the discharge contrary to the requirement

ever, the Department of Public Health, for example, establishes general rules and regulations in the exercise of its responsibilities to control contamination and public health.

The authority to establish general rules and regulations for waste dischargers has not been granted to the regional boards. This means that processing by the regional boards of individual waste discharge requirements is time consuming and expensive from the administrative point of view. In addition, theoretically each waste discharge requirement could be litigated in an enforcement procedure whereas in a contamination abatement proceeding the general rule of the Department of Public Health would be litigated and if supported by the court would be enforceable without litigation in all subsequent similar applications of the rule.

Spokesmen for the regional boards when questioned indicated to the Committee that simplified procedures and improved enforcement could result from granting authority to the boards to establish waste discharge requirements by general rules and regulations for different classes of waste dischargers. While such rule making authority at first appeared desirable, further study indicates that somewhat similar improvement in administrative procedures could be achieved by more effective use of the authority already granted to the regional boards to establish water pollution control policy. Thus, by more extensive use of policy statements and by placing more specific language in the policy statements along with enumerating certain quantitative limitations on discharges which will be included in certain types of classes of waste discharge requirements, the regional boards can improve the efficiency and effectiveness of their operations.

With the addition of the enforcement changes discussed above, the enforcement of individual waste discharge requirements becomes easier while the enhanced use of policy statements will assist the regional boards in classifying and managing individual waste discharge requirements. In addition, the prospective waste discharger, unless he has an unusual waste discharge problem, will be assisted in anticipating and understanding the requirements he will have to meet. The Committee recommends that the regional boards make the most effective use possible of present authority to establish water pollution control policy before the Legislature considers giving them rule making authority.

#### 2. Construction Practices

The Administrator and the Department of Fish and Game pointed out to the Committee that frequently construction of roads and other public works results in damage to streams and pollution of the water through added turbidity. Although many counties have strict regulations governing such construction practices in urban areas, frequently, in other areas of the State both temporary and permanent damage is done to streams through constructions of roads, dikes and excavations, as well as by dredging, grading and filling projects of various kinds.





The Administrator of Resources recommended that the statutory definition of "industrial waste" be broadened to include wastes from structural or road construction and other land projects and that the State Board and Regional Boards be authorized to establish general rules and regulations pursuant to the Administrative Procedure Act to control actual or threatened pollution from such practices.

The Administrator indicated that the usual waste discharge requirement procedure was not satisfactory to control this type of pollution and that administrative regulations rather than establishment of waste discharge requirements would be more appropriate

Such a departure from the established procedure of pollution control, however, raises a number of serious problems and the Regional Boards, which would be utilizing these procedures. did not endorse the proposed change.

In the first place the Regional Board activities in this area would require greatly enlarged staffs to provide the needed inspection and surveillance In addition, evidence presented to the Committee indicated that these problems exist in only limited areas of the State and that to date all Regional Boards have not thrown their full resources behind efforts to combat this type of pollution through conventional waste discharge requirements. Some have developed programs of working together with construction agencies to cooperatively solve these problems, however

The California Attorney General<sup>1</sup> has ruled that such construction wastes already fall within the definition of "industrial waste" as that word is used in the State Water Quality Control Law.

In view of the many problems presented, including the possibility that "every project affecting land and drainage in any way will have to be regulated,"2 the Committee recommends that the statutory definition of industrial waste be amended to incorporate construction activities consistent with the Opinion of the Attorney General without substantive change in the law This will make certain that the Regional Boards can attack this problem without major modifications in existing procedure

The Committee further recommends that during the next two years the Regional Boards attempt to determine areas where such pollution problems exist and to meet them by establishing waste discharge requirements pursuant to the Water Quality Control Law

This process will be made easier as a result of several developments. (1) 1965 legislation sponsored by this Committee brought the State, including the Division the Highways, under the jurisdiction of the Regional Boards (2) The recommendation of this Committee eliminating the mandatory cease and desist order. (3) The other enforcement recommendations above.

The Committee believes that this approach will be satisfactory and that together with the additional staff provided to the Regional Boards at the 1966 Session of the Legislature will make it possible for the Regional Boards to vigorously execute this aspect of water pollution control.

### 3. Definition of Beneficial Use

The Administrator of Resources recommended that a statutory definition of beneficial use be established in the Water Quality Control Act, as follows. "domestic, municipal, industrial or agricultural supplies, recreation, fish and wildlife sustenance and propagation and esthetic enjoinment; but not including use of such water for receiving waste discharges "

Such a definition represents a drastic change in existing California water law. This definition is not consistent with the other beneficial use provisions of the Water Code with regard to water rights. In fact, as indicated by the Chairman of the State Water Rights Board, the classification of esthetics as a beneficial use will overturn more than a 100 years of California water law and would, in effect, take California back to the old common law theory of water rights which has proved unworkable in jurisdictions in which it has been utilized

In addition, the definition modifies the existing law under which utilization of water for waste assimilation is a recognized use. Waste disposal is no longer considered a beneficial use of the waters of the State. But this does not mean that waste dischargers are denied the privilege of reasonable use of some of the

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 Statement of nine Regional Boards to Committee hearing, San Francisco, Nov. 16, 1966, p. 5

capacity of our waters to assimilate wastes. There is, of course, no right under present law to pollute. However, the Committee believes that it is not appropriate to modify the existing concepts of beneficial use at this time. No evidence was presented to the Committee to justify such a radical change in established law.

### 4. Water Quality Control Policy

The Administrator of Resources recommended that the State Water Quality Control Law be amended to clarify the meaning of state and regional water quality control policies. However, the Committee believes that the recommended classifications might create confusion rather than clarification of the issue In view of the fact that the State Water Quality Control Board is presently in the process of establishing Statewide Policy for the Control of Water Quality and will not complete this effort until the spring of 1967, the Committee recommends no major change in the existing definitions at this time.

The Committee believes that in the 1965 amendments, the Legislature essentially established a parallel relationship in the Water Code between water quality control and water pollution control with the exception that water quality control includes no authority to set requirements or to enforce them.

Essentially, both water quality and water pollution control are based on a common determination of the beneficial uses to be protected (The determination of beneficial uses also establishes a common basis with water rights and water quantity functions of the State Water Rights Board.)

Water Pollution control policy proceeds further to spell out in a statement the means by which the beneficial uses will be protected and, as appropriate, can consider classes of discharges and can spell out limitations which will, in general, apply to all similar discharges into the same receiving waters

Water quality policy statements are similar except that they can cover the broader subject matter of water quality as defined in the law and instead of being oriented towards establishing waste discharge requirements and their enforcement, are oriented towards guides which are to be given due recognition by water related planning and operating agencies

The parallelism ends at this point since no authority for establishing water quality requirements or enforcing them exists in the law. This does not mean, however, that to the extent water quality policy relates to water pollution it can not be included in waste discharge requirements but in this case it should also be included in the water pollution control policy. Obviously, there is room for both the state and regional boards to determine beneficial use and establish policy, one operating at the statewide level and the other being more specific and detailed at the regional level

There presently exists considerable confusion in the definition of terms employed in the federal statutes, the State Water Quality Control Act, the proposed Statewide Policy for the Control of Water Quality and the customary meaning of certain terms A possible solution to this problem might result from deleting the term "water quality objectives" from the State Water Quality Control Act definition of "water quality control policy" and relying on determinations of the "beneficial uses" of the receiving waters plus statements of water pollution and water quality control policy by the state and regional boards as outlined above The Committee recommends that the State Board give consideration to such a change in terminology and advise the Committee whether this would improve the statutes and clarify the Boards' operations

### 5. Additional Procedural Items

The Administrator of Resources pointed out to the Committee that although the law requires that State offices, departments and boards take cognizance of water quality control policy established by the State Water Quality Control Board, there is no requirement that they take cognizance of such policy established by Regional Water Quality Control Boards. In order to correct this omission and to implement the intent of this Committee in sponsoring water quality control legislation at the 1965 Session, the Committee recommends that a provision be added to the law requiring State Departments to take cognizance of Regional Water Quality Control policy

The Administrator also recommended deletion of the requirement that the State Water Quality Control Board establish technical qualifications for the position of Executive Officer of the Regional Boards

The Committee believes that the position of the Executive Officer of a Regional Board is primarily a technical position and that technical qualifications established by the State Board to date are satisfactory and workable. They protect against the possibility of the appointment of an unqualified person as an Executive Officer for a Regional Board Therefore, the Committee does not believe that any useful purpose would be served by eliminating this requirement and recommends that the law not be changed in this regard.

### 6. Regulation of Septic Tanks

Another area of concern in administration of the existing Water Quality Control Act is the inability of Regional Boards to effectively prohibit the use of septic tanks in designated areas. In many areas of the state local building codes and subdivision ordinances control the use of septic tanks where their use would be detrimental to the underground water supplies. However, in many areas such controls do not exist

A specific example of this problem arose recently with respect to the San Geronimo Valley of Marin County in which a large subdivision was proposed utilizing septic tanks for both residential and commercial installations

Under the existing Section 13054 3 of the Water Quality Control Act "each regional board, within its region, may specify certain conditions or locations where no direct discharge of sewage or industrial waste will be permitted" In reviewing the legality of a proposed regional board prohibition of septic tanks the Attorney General held that "direct" means the transmittal of waste discharges into receiving waters "without passing through any intervening material" An "indirect" discharge, according to the Attorney General, is one in which "there is a disposal of sewage on land with a possible subsequent movement by evaporation or percolation into surface or underground waters."

Although the provisions of the Water Quality Control Act controlling waste discharges include both direct and indirect waste discharges, this single section of the law controlling "no discharge" situations is therefore limited to direct discharges and does not cover septic tanks. The Attorney General concluded that "discharges from septic tank systems in which waste effluents are bacteriologically treated and then disbursed to connecting leaching fields, are indirect discharges and, as such, are beyond the prohibitary powers of regional boards"

Thus, the only alternative open to regional boards is to set individual requirements on the thousands of septic tanks involved. This clearly is a burdensome and wasteful process. In order to provide more effective control of septic tanks and other forms of indirect discharge in areas where flat prohibitions on discharges are required to protect the quality of underground waters, the Committee recommends that Section 13054 3 of the Water Code be amended to delete the reference to "direct" discharges. This will conform the "no discharge" provision of the law to the other basic provisions of the Water Quality Control Act relating to waste discharge requirements

#### 7. Discharge of Wastes From Boats

Of considerable concern to the Committee during the interim was the need for effective control of discharges of waste from boats. There have been few definitive studies of the effect on receiving waters of discharge of sewage and waste from boats However, the Federal Water Pollution Control Administration Pacific Northwest Regional Research Center at Corvallis, Oregon, is conducting an investigation of this subject with regard to San Diego Bay

The Department of Public Health presented legislative proposals to the Committee relating to controls over boats used on waters for domestic purposes only, and treated the matter primarily from a public health standpoint. This proposal would have required that all sanitary facilities on boats be sealed so that they could not discharge when in the water. Failure to properly seal would raise a presumption

<sup>3</sup> Opinion No 65-340 (September 7, 1966)

of discharge. Enforcement of this requirement would be by persons operating marina facilities through inspection of boats at the time of launching.

At the 1965 Session, Assembly Bill 371 (Collier) was enacted into law providing as follows:

Boating facilities constructed with funds derived from the state shall be required as a condition for the receipt of such funds to provide shoreside facilities for purposes of emptying waste matter holding tanks from vessels in accordance with needs and standards as established by the Small Craft Harbors Commission.

It appears obvious that with regard to boats already equipped with sanitary facilities, adequate disposal facilities must be placed along shorelines and at marinas if any bans on discharges are to be effective.

In addition, a great many boats in California, including the smaller ones, are not generally equipped with sanitary facilities and the availability of low-cost and efficient facilities for such boats is a matter which has not been investigated in depth by this Committee

Under the existing provisions of the State Water Quality Control Act, waste discharge requirements could be established for boats or under Section 130543, a Regional Board could prohibit discharges from boats completely on any given body of water.

The difficulty with this approach, however, lies in the difficulty of enforcement since a waste discharge requirement is not enforced under the general police powers of the state.

In addition, the existing state anti-litter law relating to waters<sup>2</sup> prohibits the disposal of litter into any waters. This law has proved exremely difficult to enforce even though violation is a crime.

The Committee recognizes the need of controlling this source of water pollution. It does not appear however, that at this time a more effective method of regulation is available. Also, adequate information on the effects of such discharges is not available. The Public Health proposal attacks only a small part of the problem.

Therefore, the Committee recommends that additional study of the effects of sewage discharge from boats be undertaken and that all affected state agencies make every effort to develop a workable procedure for protecting the waters of the state from pollution from boats.

### Other Problem Areas

Consolidation of Regional Boards with Multipurpose Regional Agencies

For some time a number of proposals have been made to consolidate the functions of selected Regional Water Quality Control Boards with various existing or proposed regional governmental agencies. Particularly, suggestions in this regard have been made with respect to the San Francisco Bay Regional Water Quality Control Board

The Committee believes that such consolidations of regulatory functions would seriously impair the functions of the State regulation of Water Quality Control. It should be emphasized that the nine regional Water Quality Control Boards are state agencies Waste discharge requirements and water quality objectives are established by Regional Boards pursuant to State law (the State Water Quality Control Act). A single statutory state provision regarding waste discharges governs the activities of all nine regional boards. As a result there is a coordinated State program, consisting of the state and regional water quality control boards. Today the general State law is applied regionally. In this manner local conditions can be fully considered by a Board familiar with them

To sever one or more of the nine regional boards and to place its responsibility within a regional entity would foster uncoordinated water pollution and water quality control. Such fragmentation throughout the state could well reverse the State's long history of effective water pollution and water quality control by permitting divergent bases of water pollution and water quality control to exist in various parts of the state.

Penal Code Sec 374c (enacted in 1965)

<sup>&</sup>lt;sup>1</sup> Chapter 1331, Harbors and Navigation Code Sec 6541

It is obvious that effective water quality control efforts must be carefully coordinated with other related activities in each region. For example, the activities of the Bay Conservation and Development Commission in controlling Bay filling are intimately related to those functions of the regional water quality control board.

The Committee believes that to date effective coordination has been obtained between Regional Boards and other governmental agencies Undoubtedly this coordination can always be improved but improvement will not be obtained by destroying the balanced program of regional water quality control developed in 1949 and which since that time has resulted in California leading the Nation in water pollution and water quality control.

This Committee has recognized, however, that regional entities to provide waste disposal services and implement waste discharge regulations is a necessity for many areas

The authorizing legislation for the San Francisco Bay Study requires that the study not only develop a comprehensive waste disposal master plan, but also requires "recommendations for the form of governmental entity or authority which would be best able to further develop and implement a comprehensive water pollution control plan and program"

In many areas local communities have found that cities and districts must join together in regional arrangements in order to effectively implement water pollution measures. This was the case in the San Diego area in the development of a metropolitan sewerage system

This type of regional development of water pollution facilities is important and will undoubtedly be necessary more often as the costs of water pollution control facilities increase. However, this function of developing physical works to control pollution is separate and apart from the regulatory function described above which is a State responsibility.

In view of the potential harm to the regional water quality control program that might come trom such a fragmentation, the Committee believes it necessary to state its opposition at this time to any effort to sever any of the nine regional boards.

### New Federal Legislation

In its closing days the 89th Congress enacted "The Clean Rivers Restoration Act of 1966". The Act makes far reaching changes in the existing PL 660 program of Federal assistance for State Water Quality Control programs and authorizes federal expenditures in the next four years totaling \$3.4 billion.

Under the legislation California is authorized to receive a ten-fold increase in federal appropriations for water pollution control facilities on an annual basis by the year 1970. The grant funds authorized for California under the new Act are as follows:

Fiscal Year	Annual Authorization	California Allocation
1966-67	\$150,000,000 *	\$9,314,300 *
1967-68	450,000,000	35,254,400
1968-69	700,000,000	56,871,150
1969–70	1,000,000,000	82,811,250
1970–71	1,250,000,000	104,428,000
	\$3,550,000,000	\$288,679,100

The grant appropriations will be available until completely expended and allocations could be adjusted between states to provide supplemental grant funds where needed Of interest to California is the fact that the bill also includes a reimbursement feature under which grants or supplemental grants for approved sewage treatment projects which began construction between June 30, 1966, and June 30, 1971, can be financed from future appropriations if federal funds are not available at the time for construction. Under this program additional funds may be made available, for example, to the districts at the Lake Tahoe area as well as other areas.

<sup>\*</sup> Existing level under prior legislation

One of the most significant changes in the law is removal of the \$1.2 million limit on an individual grant Previously, grants were limited to this amount on each project, or 30% of the project cost, whichever was less This new feature should be of particular help to the North Tahoe districts.

Although the basic grant available under the new federal law continues to be 30% of project cost, an increased maximum can be obtained in the following circumstances:

- 1. A maximum federal grant of 40% if the State provides 30% matching funds for all projects.
- 2. A maximum grant of 50% if the State provides 25% matching funds for all projects and if enforceable water quality standards have been established for the receiving waters.

It is expected that California will be able, in the next few years to establish water quality objectives on all waters of the State and will be able to comply with the requirement that water quality objectives be established

With regard to the matching fund provision, the following table indicates the magnitude of State expenditures required if California is to take advantage of either of the matching fund provisions (assuming the State's entire allocation is used completely).

	State Matching Funds			
	Without 10%	Planning Bonus	With 10%	Planning Bonus 3
Year	30% State	25% State	30% State	25% State
1967-68	\$26,440,800	\$17,627,200	\$24,037,155	\$16,024,888
1968-69	42,653,363	28,435,575	38,775,888	25,850,782
1969–70	62,108,438	41,405,625	56,462,367	37,641,854
1970-71	78,321,000	52,214,000	71,201,099	47,467,748
Total 4 years	\$209,523,601	\$139,682,400	\$190,476,509	\$126,985,272

The state matching funds must be in the form of grants, not loans, in order to comply with the federal requirement. California today has no grant programs in the field of water pollution. As indicated elsewhere in this report the financial assistance to the South Tahoe and North Tahoe Public Utility Districts is in the form of loans. The Water Quality Control Fund legislation recommended in the Waste Water Reclamation Section of this report and utilizing the \$2 million annual appropriation in tideland funds is also on a loan basis

Although it may be desirable for California public agencies to receive federal funds for the maximum portion of the construction costs possible, it does not appear that funds on the order of the magnitude required to provide state matching funds for all projects is available. However, the Congress may well not appropriate the full authorization of the new federal law in view of its unprecedented amount. Few if any states will be able to meet this obligation and the Congress may well have to reconsider this policy. The Committee is hopeful that the removal of the \$1.2 million project limitation will ease the burden on local agencies to the extent that they will be able to successfully complete their programs with the additional federal money available without state matching funds. However, every effort should be made to reevaluate possible state sources of junds for such matching programs.

A number of other provisions of the Act make available grants to state and local agencies for development of improved treatment methods, research and demonstration projects for prevention of water pollution by industry, studies of sedimentation and other specific pollution problems, training of public agency personnel, and a study of pollution from watercraft

<sup>&</sup>lt;sup>a</sup>If a project conforms with comprehensive regional or metropolitan planning, it could qualify for a 10 percent addition to the basic federal grant amount

<sup>&#</sup>x27;It should be noted that in 1964 the voters of the state of New York which needed a "crash" program on pollution, approved a hond issue of \$1 billion for water pollution control facilities. Thus, that state may have available matching funds for the federal program.

matching funds for the federal program The State, under the federal law, must match on all State projects to take advantage of the increased grants. It cannot match on a project by project basis

# Summary of Perominandations

### Waste Water Renamation

- 1. The Committee recommends that a comprehensive waste water reclamation statute be enacted, including the following:
  - a. A clear policy statement that the State has a primary interest in the development of reclamation of waters from sewage and industrial wastes and that it is the intention of the Legislature that the State undertake all possible steps to encourage the development of waste water reclamation facilities to meet the growing water requirements of the State.
  - b State Regulation of the reuse of reclaimed waste waters by
    - 1. requiring the State Department of Public Health to establish statewide "contamination standards" for each type of reuse of water;
    - 2. requiring the Department of Public Health whenever contamination exists as a result of use of reclaimed waste waters, to abate the contamination pursuant to existing enforcement provisions of the Health and Safety Code;
    - 3. requiring each Regional Water Quality Control Board to establish waste discharge requirements for sources and users of reclaimed waste waters. These waste discharge requirements shall be in addition to existing waste discharge requirements established under the State Water Pollution Control Law and shall conform to Statewide contamination standards established by the Department of Public Health.
- 2. Enactment of legislation establishing the State and Regional Water Quality Control Boards as the primary state agency with the responsibility for waste water reclamation.
- 3. Enactment of legislation providing that the Department of Water Resources studies of waste water reclamation be made at the request of the State Water Quality Control Board in order to provide maximum coordination in waste water reclamation studies and activities in the State.
- 4 Enactment of legislation providing financial assistance for waste water reclamation as follows:
  - a. Provide that the \$2 million a year placed in the State Water Pollution Control Fund by SB 2 (AB 12) be used for loans to local public agencies for waste water reclamation as well as for water pollution facilities.
  - b. Provide that the \$2 million a year be made a permanent appropriation by eliminating the existing termination date of the 1971-72 fiscal year.
  - c. Provide grants of up to \$50,000 each, on a matching basis, to local agencies for basic waste water reclamation studies and investigations with a maximum of \$250,000 per year allotted for this purpose from the State Water Pollution Control Fund.
- 5 Enact legislation requiring the State Water Quality Board, in processing applications from local public agencies for grants under the Federal Water Pollution Control PL 660 Program, to give priority to pollution facilities making optimum use of waste water reclamation.
- 6. Clarify existing law to make it clear that dam and reservoir projects utilizing waste water reclamation as a water source are eligible for Davis-Grunsky recreation grants.

## Sea Water Contression

The Committee commends the interagency cooperation of the Metropolitan Water District, federal agencies, and private utilities and recommends proceeding with the design and construction of the dual-purpose power and desalting plant

- 1. Lake Tahoe. The Committee recommends that the legislature take necessary steps, including additional financial assistance to assure the completion of both North and South Shore export project.
- 2 San Francisco Bay-Delta Study. Under the Federal Water Pollution Control Act, as amended in 1966, the Bay-Delta Study appears to qualify for federal financial assistance. The Committee recommends that the State fully explore these possibilities before requesting additional state appropriations
- 3. Water Resources Control Board. The Committee recommends the enactment of a Water Resources Control Board combining the present functions of the State Water Rights Board and the State Water Quality Control Board and the Department of Water Resources functions of Watermaster Service Administration and Supervision of Safety of Dams. The Regional Water Quality Control Boards would remain unchanged.
- 4. The need for legislation amending the State Water Quality Control Act.
  - a. Enforcement Procedures The Committee recommends:
    - 1. that a Regional Board be authorized to dispense with a cease and desist order and go directly to court when, in its judgment, such action is imperative.
    - 2. that the Attorney General be authorized to prosecute court actions on behalf of regional boards upon a finding of the local board that the district attorney is unwilling to do so.
    - 3. that the law be clarified so that when injunctive relief is sought by a regional water quality control board as a means of enforcing its discharge requirements, the validity and reasonableness of the discharge requirement will not be an issue, unless it is contested by the discharger. If the discharger contests the validity or reasonableness of the discharge requirement, the burden of proving the discharge requirement invalid or unreasonable rests upon him and in the absence of his being able to persuade the court by a preponderance of the evidence that such requirement is invalid or unreasonable the injunction must issue. Of course the board must prove that the requirement was duly established and that the discharger actually violated it.
    - 4. that the law be amended to require the court to decide an enforcement case promptly (within 30 days).
    - 5. that the Regional Boards make the most effective use possible of present authority to establish water pollution control policy before the Legislature considers giving them rule-making authority.
  - b Construction Practices. The Committee recommends:
    - 1 that the statutory definition of industrial waste be amended to incorporate construction activities consistent with the opinion of the Attorney General.
    - 2. that during the next two years the Regional Boards attempt to determine areas where such pollution problems exist and to meet them by establishing waste discharge requirements
  - c. Water Quality Control Policy. The Committee recommends:
    - 1. that no major changes be made in existing definitions at this time.
    - 2. that the State Board give consideration to drafting terminology to delete the existing reference to water quality "objectives".
  - d. Additional Procedural items. The Committee recommends:
    - 1. that state departments be required to take cognizance of Regional Water Quality Control Policy.
    - 2. that no change be made in the requirement that the State Board establish technical qualifications for Regional Board executive officers.
  - e. Regulation of Septic Tanks. The Committee recommends:
    - 1. that Section 13054.3 of the Water Code be amended to delete the reference to "direct" discharge to conform the law to provisions relating to waste discharge requirements, and to permit the effective regulation of septic tanks.
  - f. Discharge of wastes from Boats. The Committee recommends that additional study of the effects of sewage discharge from boats be undertaken and that all affected state agencies make every effort to develop a workable procedure for protecting the waters of the state from pollution from boats
- 5. Other Problem Areas.
  - Consolidation of Regional Boards with multipurpose Regional Agencies The Committee states its opposition to any effort to sever any one of the 9 Regional Boards or to consolidate any with a multipurpose regional agency.

# **Appendix**

# Proposed Waste Water Reclamation Statute

act to amend Section 12.2 of Chapter 138 of the Statutes of 1964, First Extraordinary Session, to amend Section 4 of Chapter 137 of the Statutes of 1966, First Extraordinary Session, to amend the heading of Chapter 5 (commencing with Section 13100), Division 7 of, to amend Sections 13100 and 13101 of, to amend and renumber Sections 13102, 13103, 13104, and 13105 of, to add Section 13005 1 to, to add an article heading immediately before Section 13100 of, to add an article heading immediately before Section 13102 of, to add Sections 13114 and 13115 to, to add Article 3 (commencing with Section 13125) to Chapter 5 of Division 7 of, to add Chapter 6 (commencing with Section 13500) to Division 7 of, and to repeal Section 230 of, the Water Code, relating to water pollution and reclamation, and making an

ne people of the State of California do enact as follows.

Section 1 Section 230 of the Water Code is repealed 230 The department, either independently or in cooperawith any person or any county, state, federal, or other to the extent funds are allocated therefor; shall consurveys and investigations relating to the reclamation of from sevage or industrial wastes for beneficial purposes -- but not limited to the determination of quantities of water presently wasted; and possibilities of use of such for recharge of underground storage or for agricultural industrial uses; and shall report to the Legislature and to appropriate regional water pollution control board thereon,

Sec 2 Section 13005 1 is added to the Water Code, to

"Reclaimed waste waters" means waters containsewage or industrial waste which have been treated or wase purified so as to enable beneficial reuse
Sec 3 The heading of Chapter 5 (commencing with Sec-

.. 13100) of Division 7 of the Water Code is amended to

### CHAPTER 5 THE STATE FINANCIAL ASSISTANCE FOR WATER POLLUTION CONTROL AND WASTE WATER RECLAMATION Fund

An article heading is added immediately preceding 13100 of the Water Code, to read

Article 1 State Water Quality Control Fund

SFC 5 Section 13100 of the Water Code is amended to

13100 As used in this chapter, unless otherwise apparent the context

(a) "Fund" means the State Water Pollution Quality Con-Fund

(b) "Public agency" means any city, county, district or

political subdivision of the state
"Facilities" means either or both (1) facilities for the treatment, and export of sewage when necessary to water pollution or (2) facilities to reclaim waste

SEC 6 Section 13101 of the Water Code is amended to

13101 The State Water Pollution Quality Control Fund continued in existence The fund shall continue to be availfor expenditure by the state board in making loans or to municipalities and districts for the construction of and storm drainage facilities, public agencies in ac-- with the provisions of this chapter

An article heading is added immediately preceding Section 13102 of the Water Code, to read

Article 2 Loans and Grants to Local Agencies

SEC 8 Section 13102 of the Water Code is amended and renumbered to read

13102 13110 Applications for loans under this chapter shall include

(a) A description of the proposed facilities

(b) A statement of facts showing the necessity for the proposed facilities and showing that funds of the municipality or district public agency are not available for financing such facilities and that the sale of revenue or general obligation bonds through private financial institutions is impossible or would impose an unreasonable burden on the municipality or district public agency

(c) A proposed plan for repaying the loan

(d) Other information as required by the state board

SFC 9 Section 13103 of the Water Code is amended and renumbered to read

13103 13111 Upon a determination by the state board, after consultation with the State Board of Public Health, that (a) the sewerage facilities proposed by an applicant are necessary to the health or welfare of the mhabitants of the state, (b) and that the proposed facilities meet the needs of the applicant, (c) that funds of the municipality or district public agency are not available for financing such facilities and that the sale of revenue or general obligation bonds through private financial institutions is impossible or would impose an unreasonable burden on the municipality or district; and public agency, (d) that the proposed plan for repayment is feasible, (e) in the case of facilities proposed under Section 13100 (c)(1) that such facilities are necessary to prevent water pollution, and (f) in the case of facilities proposed under Section 13100(c)(2) that such facilities will produce water suitable for beneficial reuse and that the public agency has adopted a feasible program for such reuse, the state board, subject to approval by the Director of Finance, may loan to the applicant such sum as it determines necessary is not otherwise available to the public agency to construct the proposed facilities

SEC 10 Section 13104 of the Water Code is amended and renumbered to read

13101 13112 Money loaned under the provisions of this chapter shall be secured by bonds of the borrowing mumerpality or district public agency and shall be repaid, with interest at the rate of 2 percent, in annual installments of such amount as the state board determines to be feasible. The board, subject to approval by the Director of Finance, may defer any one or more of the repayment installments of a borrowing municipality or district

No loan shall be made to a public agency unless it executes an agreement with the state board under which it agrees to repay the amount of the loan, with interest, within 25 years following, at the election of the state board, a 10-year moratorium on principal and interest payments Except as otherwise provided in this section, the interest shall be at a rate equal to the average, as determined by the state board, of the nct-interest costs to the state on the sales of general obligation bonds of the state that occurred during the calendar year immediately preceding the calendar year in which the interest falls due The interest falling due after the moratorium shall be payable at the last rate applied during the moratorium However, when the applicable average of the net-interest costs to the state is not a multiple of one-tenth of 1 percent, the interest rate shall be at the multiple of one-tenth of 1 percent next above the applicable average of the net-interest costs

The interest rate applicable to any loan made pursuant to this chapter for which an application was filed prior to January 1, 1967, shall be at the rate of 2 percent
Sec 11 Section 13105 of the Water Code is amended and

renumbered to read

13105 13113 All money received in repayment of loans under this chapter shall be paid to the State Treasurer and credited to the fund for expenditure by the state board in making loans under the provisions of this chapter Whenever, in the judgment of the state board, the amount of funds accumulated to the credit of the fund exceeds the reasonable requirements of the state board for making loans under the provisions of this chapter, the board shall determine the amount of such excess and certify same to the State Controller Excess funds, so certified, shall revert to the General Fund in the State Treasury-

SEC 115 Section 13114 is added to the Water Code, to read

13114 (a) Grants may be made by the state board to public agencies to pay not more than one-half of the cost of studies and investigations made by such public agencies in connection with waste water reclamation

(b) Not more than a total of two hundred fifty thousand dollars (\$250,000) shall be granted pursuant to this chapter in any fiscal year, and not more than fifty thousand dollars (\$50,000) shall be granted to any public agency in any fiscal year

(c) Applications for grants shall be made in such form, and shall contain such information, as may be required by the state board

SEC 12 Section 13115 is added to the Water Code, to read

13115 The state board may, from time to time, make such rules and regulations which are consistent with this chapter as may be necessary to carry out this chapter

as may be necessary to carry out this chapter

Sec 13 Article 3 (commencing with Section 13125) is
added to Chapter 5 of Division 7 of the Water Code, to read

# Article 3 Public Agency Election

13125 Before a public agency may enter into a contract with the state board for a construction loan under this chapter, the public agency shall hold an election on the proposition of whether or not the public agency shall enter into the proposed contract and more than 50 percent of the votes east at such election must be in favor of such proposition

13126 The election shall be held in accordance with the

following provisions

(a) The procedure for holding an election on the incurring of bonded indebtedness by such public agency shall be utilized for an election of the proposed contract as nearly as the same may be applicable. Where the law applicable to such agency does not contain such bond election procedure, the procedure set forth in the Revenue Bond Law of 1941 (Chapter 6 (commencing with Section 54300) Part 1, Division 2, Title 5 of the Government Code), as it may now or hereafter be amended, shall be utilized as nearly as the same may be applicable

(b) No particular form of ballot is required

(c) The notice of the election shall include a statement of the time and place of the election, the purpose of the election, the general purpose of the contract, and the maximum amount of money to be borrowed from the state under the contract

(d) The ballots for the election shall contain a brief statement of the general purpose of the contract substantially as stated in the notice of the election, shall state the maximum amount of money to be borrowed from the state under the contract, and shall contain the words "Execution of contract—Yes" and "Execution of contract—No"

(e) The election shall be held in the entire public agency except where the public agency proposes to contract with the department on behalf of a specified portion, or of specified portions, of the public agency, in which case the election shall be held in such portion or portions of the public agency only

SEC 14 Chapter 6 (commencing with Section 13500) is added to Division 7 of the Water Code, to read

### CHAPTER 6 WASTE WATER RECLAMATION AND REUSE

# Article 1 Short Title

13500 This chapter shall be known as and may be cited as the Waste Water Reclamation and Reuse Law

## Article 2 Declaration of Policy

13510 It is hereby declared that the people of the state have a primary interest in the development of facilities to reclaim waters containing sewage or industrial waste to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the state

13511 The Legislature finds and declares that a substantial portion of the future water requirements of this state may be economically met by beneficial reuse of waste waters that

have been reclaimed

The Legislature further finds and declares that the utilization of reclaimed waste waters by local communities for domestic, agricultural and industrial purposes will contribute to the peace, health, safety and welfare of the people of the state Reuse of reclaimed waste waters constitutes the development of "new basic water supplies" as that term is used in Chapter 5 (commencing with Section 12880) of Part 6 of Division 6 of this code

13512 It is the intention of the Legislature that the state undertake all possible steps to encourage development of waste water reclamation facilities so that reclaimed waste water may be made available to help meet the growing water requirements of the state

### Article 3 State Assistance

13515 In order to implement the policy declarations of this chapter, the state board is authorized to provide loans for the development of waste water reclamation facilities, or grants for studies and investigations in connection with waste water reclamation, pursuant to the provisions of Chapter 5 (commencing with Section 13100) of this division

### Article 4 Contamination Standards

13520 As used in this article "contamination standards" means the maximum levels of constituents of water, which may cause contamination, permissible in water to be used for any reuse purpose

13521 The State Department of Public Health shall establish statewide contamination standards for each varying type

of use of reclaimed waste waters

13522 Whenever the State Department of Public Health finds that a contamination exists as a result of use of reclaimed waste waters, the department shall order the contamination abated in accordance with the procedure provided for in Chapter 6 (commencing with Section 5400), Part 3, Division 5 of the Health and Safety Code

13523 Each regional board, pursuant to Chapter 4 (commencing with Section 13040) of this division, shall, if it determines such action to be necessary to protect the public health or safety, establish waste discharge requirements for sources of water which are or will be used, either directly or otherwise, as reclaimed waste water Such waste discharge requirements shall conform to the statewide contamination standards established pursuant to this article

13524 In administering any statewide program of financial assistance for water pollution or water quality control which may be delegated to it pursuant to Section 13023 of this code, the state board shall give priority to water pollution control facilities providing optimum reclamation and reuse of waste waters

### Article 5 Surveys and Investigations

13530 On request of the state board, the department, either independently or in cooperation with any person or any county, state, federal, or other agency, to the extent funds are allocated therefor, shall conduct surveys and investigations relating to the reclamation of water from sewage or industrial wastes for beneficial purposes, including but not limited to the determination of quantities of such water presently wasted, and possibilities of use of such water for recharge of underground storage or for agricultural or industrial uses, and shall report to the Legislature, to the state board, and to the appropriate regional water quality control board thereon, annually

# MANAGEMENT SURVEY

of the

# STATE TEACHERS' RETIREMENT SYSTEM

for the

# Joint Legislative Retirement Committee of the California Legislature

May 15, 1967

JAMES A HAYES
WILLIAM M KETCHUM
CHARLES W MEYERS

# Assembly California Legislature

# Assembly Committee on Retirement Systems

May 16, 1967

Hon. Jesse M. Unruh Speaker of the Assembly

Hon. Hugh M. Burns President pro Tem of the Senate

# Gentlemen:

The Joint Legislative Retirement Committee herewith presents the final report of the Peat, Marwick, Mitchell and Company study of the State Teachers' Retirement System. This study was authorized by passage of ACR 54, Chapter 85, 1966 First Extraordinary Session, and the sum of \$75,000 was appropriated from the Contingent Funds of the Senate and the Assembly for this purpose.

From among twelve major actuarial and accounting firms which made proposals to accomplish the study, this company was chosen as the most highly qualified and best suited to enter into this contract. During the ensuing months of investigation and accumulation of data, representatives of this company established excellent rapport with the personnel at the system, and a very fine basic understanding was maintained with members of the committee and representatives of state departments vitally concerned with this study.

Close consideration of their findings and recommendations indicates that primary attention must be given to redrafting the retirement law, improving the financial position of the system, and simplification and strengthening of administrative procedures as well as organizational structure.

With careful implementation of these and other future recommendations, it is the sincere hope of the committee that the State Teachers' Retirement System of California may emerge as one of the outstanding examples of public retirement benefit systems in the country.

Respectfully submitted,

RICHARD BARNE

ERB:rc

# PEAT, MARWICK, MITCHELL & Co.

# 425 CAPITOL MALL

# SACRAMENTO, CALIFORNIA 95814

May 15, 1967

The Honorable E. Richard Barnes, Chairman The Joint Legislative Retirement Committee California State Legislature Sacramento, California

Dear Assemblyman Barnes:

Peat, Marwick, Mitchell & Co. is pleased to submit this report covering our management survey of the State Teachers' Retirement System as authorized by State of California Standard Agreement Number LCB 8308, dated December, 1966 and Assembly Concurrent Resolution 54.

# SCOPE OF SURVEY

The scope of the management survey as set forth in the above cited agreement was:

- 1. Study the existing systems and propose revisions as necessary for the development of efficient systems for the accumulation, handling and processing, maintenance, and reporting of reliable operating, accounting, and management information on a current basis.
- 2. Study the present organizational plan and management structure and propose revisions as necessary for the development and establishment of an organizational plan, together with a management structure, that is consistent with, and which will best serve to accomplish, (1) above.
- 3. Review the retirement system's proposed configuration of equipment in connection with findings regarding present and projected needs. Determine the feasibility of joint use of equipment and facilities with the State Employees' Retirement System.
- 4. In the study of all the systems, ascertain those activities carried on by the retirement system in fulfilling its purposes and responsibilities that can be converted, wholly or in part, to electronic data processing to produce increased effectiveness and improved efficiency in operations.

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- 5. Ascertain the requirements and develop a plan for the accumulation, retention, and maintenance of data necessary to the actuarial requirements of the retirement system.
- 6. Study the proposed change from an annual reporting of member information to a monthly reporting period. Review the information required by the retirement system, the form and method of reporting of this information, and the instructions issued for providing this information. Outline any indicated problem areas and any inequities among the membership that might result, and propose solutions.
- 7. Ascertain the reporting needs of the Legislature, the State Controller, the State Teachers' Retirement Board, and the State Teachers' Retirement System, and develop and describe reports required to fulfill the needs.
- 8. Review the existing system of internal control and indicate any critical need for strengthening pending implementation of any recommendations for changes. In developing recommendations during all phases of the survey, emphasis shall be placed on adequate controls for the continuing manual operations and in regard to the proposed electronic data processing applications to minimize recording, processing, and reporting errors.
- 9. Study the laws governing the retirement system and the attendant rules and regulations and indicate any changes that are desirable where procedures and requirements for data collection, record keeping, fund structure, length of service computation, benefit computation, etc., may be outdated and unnecessary or not in accordance with sound practices.
- 10. Ascertain and describe legislation needed to implement the findings and recommendations developed during the management survey.
- 11. Evaluate the present and anticipated effect of continuance of local systems on, and their relationship to, the State Teachers' Retirement System considering the options available to local system members at the time of retirement. Analyze the cost to the state of subventions to local systems and determine the fairness to the state relative to the cost.
- 12. Explore the advisability and indicate the general acceptance among retirement systems of including a factor in the employer and member contribution rates and establishing a separate reserve account to provide for the financing of the administrative costs of the State Teachers? Retirement System.
- 13. Explore and indicate the feasibility of development and the capability of the system to develop and maintain actuarial data on a formal controlled basis for the purpose of making annual valuations by the system's staff for recording and inclusion in annual financial statements and state the general acceptance of this practice.
- 14. Review the present administrative procedure of the investment program of the State Teachers' Retirement System.

Meetings were held with the Joint Legislative Committee to review the progress of the study and to obtain direction in certain areas. Representatives from the Department of Finance, Auditor General's office and Legislative Analyst's office have attended these progress meetings. A special meeting was convened to present the proposed legislative changes to the Board of the State Teachers' Retirement System and members of the California Teachers' Association.

On April 17, 1967 we submitted a preliminary report to your committee describing the recommended changes to the existing Teachers' Retirement System's legislation. This material is included in this report in Chapters II through VI and Chapter XIV.

# RECOMMENDATIONS

The major recommendations contained in our report are summarized, by chapter, in the remainder of this letter.

# (a) Chapter II

The present retirement law should be rewritten on a programmed basis to:

- 1. Simplify its wording and standardize its contents.
- 2. Include a composite index to existing and prior law.
- 3. Delete certain sections of the law which can be more effectively handled by policy decisions made by the S. T. R. S. Board or its appointed officers.
  - 4. Simplify administrative procedures.
  - 5. Improve the financial position of the System.
- 6. Require that before future legislation is passed into law, the costs over a number of years and the effect on operative procedures be made clear to the Legislature.

# (b) Chapter III

In order to revise the present contribution plan:

- 1. Amend the retirement law to make it optional, rather than compulsory, that rates vary by age and sex.
- 2. Perform an actuarial study to develop a flat contribution rate for all members.
- 3. Develop a schedule of rates varying by sex and broad entry age groups, retaining the 50-50 concept if the flat rate is not feasible.
- 4. Consider direct remittance by the employing agency of member contributions, coupled with corresponsing cash salary reduction of equal amount in lieu of payroll deductions.
  - 5. Discontinue voluntary contributions.
- 6. Change the normal form of allowances to a "modified cash refund annuity" which provides a death benefit equal, at any time, to the excess of the member's accumulated contributions at retirement over the sum of the allowance payments received by him.
- 7. Extend the money-back guarantee to the optional forms of settlement in order to make them consistent with the recommended normal form.
- 8. Take no action to amend the law to remove the inequities cited in this chapter, since the proposed flat rate contribution system will accomplish this automatically.
- 9. Establish an interest rate annually by the Teachers' Retirement Board to determine refunds to members and their beneficiaries.
- 10. Credit interest on refunds in the future on all member contributions, including the first \$60.
- 11. Include only a graded percentage of the refundable interest when crediting the member's account on short-term terminations during the first five years the member participates in the System.
- 12. Reflect such forfeited interest as an increase in an expense reserve to help defray the administrative costs of the System.
- 13. Calculate redeposits by using a rate of interest which is approximately equal to the rates actually earned by the System during the member's absence.
- 14. Use the same procedure as item (13) above to determine the cost of "buying-in" voluntarily for local retirement system service.

- 15. Use the hypothetical amount which would have been accumulated by the System had the member not been in a local retirement system in calculating subvention payments, using the experienced interest rates rather than the refund interest rate.
- 16. Include in the law a different set of eligibility requirements for substitute and part-time teachers (including adult education teachers) to be determined by the Teachers' Retirement Board.
- 17. Define the benefit for future service for part-time and substitute teachers as one-sixtieth of "Total Adjusted Earnings."

# (c) Chapter IV

Recommendations affecting the fund structure are:

- 1. Revise the existing reserve structure to make more effective use of the assets of the System and to simplify accounting records and systems.
- 2. Redistribute all Permanent Fund Reserves and the Contingency Reserve.
- 3. Redefine the contribution of the State with respect to retired members, survivors' allowances, one-half continuance allowances, death benefits and the active member reserve.
- 4. Combine the existing methods of contributions from school districts and employing agencies into a single rate.

# (d) Chapter V

The local systems (Los Angeles and San Francisco) are not a major burden on S. T. R. S. and no significant administrative impediments would result if the local systems were merged into S. T. R. S. We recommend these actions:

- 1. Subventions to Los Angeles and San Francisco should be computed on the same basis.
- 2. Subventions to these systems should be calculated on the basis of an interest rate approximately equal to the actual investment earnings rate of the System, instead of the refund rate as in now the case.
- 3. The State should urge adoption of a plan to merge the local systems into S. T. R. S. A voluntary committee should be formed to study the many issues and to formulate a program of merger.

# (e) Chapter VI

The following immediate changes to the current Retirement Law should be made:

- 1. Modify Section 13861 of the State Teachers' Retirement Law to permit the use of revised methods of determining member service for substitute and part-time teachers prior to July 1, 1956.
- 2. Broaden the investment powers of the Board to include the power to enter into group annuity contracts with life insurance companies.
- 3. Permit the Board to invest in such contracts all or any part of the System's assets.
- 4. Add the System to those agencies exempted from approval by the Director of Finance on every investment transaction under Section 11012 of the Government Code.

# (f) Chapter VII

In order to strengthen and simplify the organization of S. T. R. S. we recommend:

- 1. The position of Executive Officer should provide both administrative and technical direction of the System.
- 2. The position of Assistant Executive Officer should be responsible for execution of policy and administrative decisions of the Executive Officer.
- 3. The position of External Relations Officer should be established reporting to the Executive Officer.
- 4. The position of Actuarial Coordinator should replace the position of Actuary, based on revised position requirements.
- 5. The existing three divisions (Membership and Benefits, Accounting, and Office Services) should be reorginized into five divisions (Membership, Benefits, Accounting, Data Processing and Office Services) with a reassignment of responsibilities on a functional basis.
- 6. A training program should be instituted based on development of procedure manuals, scheduled training sessions for S. T. R. S. personnel and cross-training and rotation of duties.
- 7. Office layout should be revised to provide more efficient supervision by management and effective flow of work.

- 8. The Teachers' Retirement Board should become more effective through:
  - attendance at all Board meetings by all members of the Board
  - more attention to policy and administration matters than to details of member cases
  - submission of periodic management reports to the Board by the Executive Officer covering action taken or planned to to improve the operation of the System

# (g) Chapter VIII

Revision of the System for reporting member contributions should include:

- 1. Assumption by S. T. R. S. of full responsibility for collecting and maintaining the official record of teacher service for retirement.
- 2. The System should determine eligibility for membership, when a retired substitute has exceeded the limitation, or when a member is eligible for redeposit.
- 3. Conversion from annual to monthly reporting of member contributions.
- 4. Compatibility of reporting content with reports of the State Employees' Retirement System should be achieved.

# (h) Chapter IX

The basic recommendation is for a long-range conversion program to a computer system based on:

- 1. Establishing a sound and workable program for bringing present records up to date.
- 2. Delaying consideration of automatic computation of quotations and retirement benefits and the video display concept.
- 3. Use alternate methods, for the foreseeable future, for processing an automated roster file, the actuarial analysis and investment reporting.
- 4. Convert to monthly contribution reporting over a three year period.

- 5. Reconsideration of integrating data processing operations of S. T. R. S. and S. E. R. S. at the time S. T. R. S. is on a current basis and is operating effectively (at least five years from now).
- 6. Modification of the present IBM System 360/30 equipment to eliminate the tele-processing equipment, reduce the storage capacity of the Central Processor (65K to 32K), and substitute the 1443 Printer for the 1403 Printer and Control.

# (i) Chapter X

Recommendations affecting membership records include:

- 1. Combine member records now maintained by Verifications, Refunds, Benefits, Auditing, Claims, Office Services, and the Executive Officer into one master file.
- 2. Install a system of "file management" over member records including a monthly inventory of files, preparation of a "File Locator List" and definition of filing sequence and contents.
- 3. Require members to use Social Security numbers, in correspondence or contacts with the System.
  - 4. Redesign of Rate Request Form (309).
- 5. Issue of a questionnaire to all counties to determine the potential of eliminating the process of returning forms and punched cards.
- 6. Establishing processing controls over new member applications and status changes forwarded to data processing.

# (j) Chapter XI

We recommend that the Verifications Sections in Benefits and Membership be combined in the Membership Division. Additional recommendations for Benefits and Verification Operations include:

- 1. Filing of forms 368A (record of teaching service sent to teachers with service prior to 1944) in the member file record.
- 2. Begin verification activity when letters requesting retirement are received from teachers.
- 3. Eliminate requirement of form F 69 if teacher has a form 368A on file.
- 4. Accept this record of service for computing retirements once service has been verified.

- 5. Transfer responsibility for processing estimated retirement payments to the Retired Payments Section (Chapter VII).
- 6. Computing service on the basis of days worked, earned to earnable salary, records available at the System (when county records are unavailable) or on the basis of a notarized statement from the teacher should be permitted based on the specific county records available.
  - 7. Revise the internal verifications procedure.

# (k) Chapter XII

Five major functions should be established in the Accounting Division - Control, Reports, Member Receivables, Benefit Payments, and Cash Management and Investment Accounting.

- 1. Eliminate responsibility in this Division for recording members' service and contributions, determining arrears amounts, redeposit eligibility, members' statements or verification entries.
- $2\,\cdot\,$  Assign responsibility for processing controls of all data to the Control Section.
- 3. Assign responsibility for System Reporting (financial, actuarial, budgetary and performance) to the Reports Section.
- 4. Assign responsibility for maintaining membership billing records to the Member Receivables Section and redesign the billing system.
- 5. Combine benefit rolls from the Retired Payments Section, Office Services Section, and the Benefits Section into the Benefit Payments Section.

# (1) Chapter XIII

We recommend that the responsibility for performing the various actuarial functions be reallocated, that the actuarial information produced and reported by the System be expanded and that the assumptions used in estimating
liabilities and determining member contribution rates be subject to critical
annual analysis. In addition we recommend:

- 1. Establishing the position of "Actuarial Coordinator" to replace the position of Actuary.
- 2. Utilize the services of an actuarial consulting firm to review procedures and interpret processing results rather than to process the data.

- 3. Scientific projections, showing the expected level and incidence of State outlays, be made a part of the valuation procedure.
- 4. All proposed liberalizations of the plan be priced out in connection with the actuarial valuation, or as a special study.
  - 5. Actuarial valuations be performed on an annual basis.
- 6. A gain and loss analysis be incorporated into the annual valuation procedure and these results be included in the System's annual report.

# (m) Chapter XIV

The Teachers' Retirement Board should consider the following regarding

System investments and investment administration:

- 1. Purchasing group annuities from an insurance company.
- 2. Pursuing a plan to invest in mortgage contracts when they are attractive incomewise.
  - 3. Continually re-evaluating corporate equity investments.
- 4. In conjunction with steps (2) and (3), exploring the investment services offered by commercial firms to provide investment services in segregated portfolios.
- 5. Improving the use of presently available cash resources through improved procedures and forecasting.
- Utilizing S. E. R. S. computerized investment accounting programs to reduce expense and provide better portfolio information to investment officers.

# (n) Chapter XV

Recommendations included in this report are expected to substantially reduce the State's outlay for benefits. However, installation of the recommended program will require increased administrative expense, though not greatly in excess of the programs originally proposed by S. T. R. S. for data processing alone. In summary:

- 1. Clerical costs of \$130,000 to \$333,000 are expected annually over the next five years. Reductions should begin in 1973.
- 2. The program for purchasing annuities should result in a reduction of State funds to be approximately \$1,000,000 in the first year (ending June 30,

1968) with an ultimate annual savings of \$2,500,000 to the State.

- 3. More effective use of the reserves of the System should reduce the State outlay by an additional \$1,000,000 to \$3,000,000 annually.
- 4. Revising the investment policy and making more rapid investments should produce additional income from this source by \$50,000 to \$100,000 per year.
- 5. Monthly reporting and completion of the verifications program will reduce clerical costs at county offices by approximately \$300,000 annually.
- 6. Completion of the same program at S. T. R. S. will reduce clerical costs at S. T. R. S. by approximately \$100,000 annually.
- 7. Additional clerical cost reductions should result from installation of the Computer System.
- 8. Finance administrative costs by either (a) adding a direct surcharge to member contributions, or (b) deducting the amount required from investment income.

# (o) Chapter XVI

Implementation of recommendations contained in this report will require at least five years on a scheduled basis. Major implementation programs would be:

- 1. Organization plans and programs, changes to division structure, external relations, documentation, training and office layout.
  - 2. Actuarial Study data updating, analysis and recommendations.
  - 3. Law rewriting and legislative approval.
- 4. <u>Data Processing</u> equipment specifications, design and programming, training and testing, documentation and conversion.
- 5. <u>Clerical Systems</u> member records, work simplification, verification, controls and forms revision.
- 6. <u>Financial</u> investment administration, funds structure, accounting records and reporting.

The implementation program should be assigned, on a full-time basis, to an employee of the System who has responsibility at the Assistant Executive Officer level and who can control and coordinate the program.

\* \* \* \* \* \* \* \*

We wish to express our appreciation for the cooperation and many courtesies extended to us during this study by everyone concerned.

Very truly yours,

Peat, Marwick, Mitchell & Co.

# MANAGEMENT SURVEY

of the

# STATE TEACHERS' RETIREMENT SYSTEM

for the

Joint Legislative Retirement Committee of the California Legislature

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# I - INTRODUCTION

We present in this report our findings and recommendations resulting from our survey of the California State Teachers' Retirement System. We have met to discuss the legal and system recommendations with management of the System so that they are fully aware of the results of our study. Progress meetings with the Joint Legislative Retirement Committee have been held to review the progress of the study and to obtain direction in certain areas. In addition, representatives from the Department of Finance, the Auditor General's office, Legislative Analyst's office, have attended the progress meetings and were individually kept informed of the progress of the study. A special meeting was convened to present the proposed legislative changes to the Board of the State Teachers' Retirement System and members of the California Teachers' Association.

# OBJECTIVES OF THE STUDY

In brief, the objectives were to:

- 1. Evaluate the existing organization, systems, and procedures in relation to the requirements of the System and develop recommendations to improve service, effectiveness and control within reasonable cost boundaries.
- 2. Review the System's proposed plans for expanded data processing capacity and monthly reporting, and explore other alternatives.
- 3. Develop more effective informational and reporting methods to members, to State agencies and to the Legislature.
- 4. Study the relationship of laws governing the System with administrative processes.
- 5. Explore the administrative impact of local systems, financing of administrative costs, and investments.
- 6. Evaluate present actuarial methods, assumptions and responsibilities as they affect the administrative and financial aspects of the System.

# ORGANIZATION OF THE REPORT

Due to the extensive recommendations resulting from this study we have limited our report to specific recommendations which require management, Board or Legislative approval. We have not attempted to list the many detailed recommendations in the areas of forms, work flow, card processing and office layout. These, we feel, are an integral part of installation which should be reviewed and discussed at that time.

In accordance with our contract a preliminary report describing legislation needed to implement our findings and recommendations was prepared by April 15, 1967 and submitted on April 17, 1967. Minor modifications have been made to this report, and its content is contained in Chapters II through VI and Chapter XIV of this report.

Chapters VII through XIV deal with the organizational, systems and procedural aspects of the System. The groundwork for later detailed discussion is contained in Chapter VII, Organization, which outlines changes to structure and duties of the System. Chapters VIII and IX discuss the key questions of monthly reporting and data processing. Chapters X through XIV contain a review of the membership, benefits, verification, accounting, actuarial and investment activities.

 $\hbox{ Chapters XV and XVI summarize the cost impact of the proposed programs } \\ \hbox{and the plan structure for implementation.}$ 

# MAJOR RECOMMENDATIONS

The major recommendations resulting from this study which are discussed in detail in the following chapters can be summarized as follows:

- Law and Rules Governing
   The State Teachers' Retirement System
  - Immediate changes to the law to reduce the administrative workload of the System and the counties and to improve the financial position of the System and the State.

- Deferred changes to the law to remove inequities, and simplify the wording of the law by a complete rewrite of the law.

# 2. Proposed Plan

- Within the concept that members should pay for 50% of their currently accruing benefits.
- The introduction of a flat rate concept.
- New method to calculate service for substitutes and part-time teachers.
- Actuarial study to evaluate and cost our proposals.

# 3. Fund Structure

- Reallocation of resources.
- Simplification of fund structure.

# 4. Local Retirement Systems

- Elimination of inquities.

# 5. Organization

- Duties and responsibilities of the Executive and Assistant Executive Officers.
- Increase divisions from three to five.
- Initiate External Relations program.

# 6. Reporting of Contributions

- Monthly reporting on a "phased in" basis.

# 7. Data Processing

- Scaled down computer equipment specifications from original S.T.R.S. proposals submitted in 1966.
- De-accelerated program of installation.

# 8. Verification of Records prior to 1956

- Accelerated program and additional staff to verify service credits prior to 1956.

# 9. Accounting and Actuarial Operations

- Improved financial reporting to the System and the State.
- Annual actuarial valuation.
- Gain and Loss Analysis.

# TERMINOLOGY

Within the report we have used certain terms which, for convenience have been shortened. These are as follows:

- State Teachers' Retirement System the System, S.T.R.S., or the Retirement System.
- Teachers' Retirement Board the Board, the Retirement Board.
- State Employees' Retirement System S.E.R.S.
- State Teachers' Retirement Law the law.
- San Francisco and Los Angeles Teachers' Retirement Systems local systems.
- Counties, direct reporting school districts and reporting agencies counties, districts, reporting agencies, or reporting units.

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# II - LAWS AND RULES GOVERNING THE STATE TEACHERS' RETIREMENT SYSTEM

Chapters III to VI of this report set forth in detail our analysis of the existing laws, rules and administrative policies governing the State Teachers' Retirement System. Our recommendations to change the law will simplify its administration, minimize the inequities to members, improve service and benefits to members, and will bring the actual operations of the System into closer compliance with the objectives of the law.

# TIMING OF CHANGES

The proposed changes to the law have been divided into two types, immediate and deferred These changes will have a considerable impact on the administration of the System. It is therefore imperative that only those changes to the law which will immediately reduce the administrative workload of the System and the employing agencies and improve the financial position of the System and the State should be passed into law during the current session of the Legislature. They are limited in number and are outlined subsequently in Chapter VI. The Proposed Plan which is outlined in Chapter III of the report should be considered as a total deferred program for the members and the State and should not be implemented until:

- 1. The cost impact of the recommendations has been determined.
- The proposed organization has been effected.
- 3. The administrative policies and procedures have been established.
- 4. The present law has been rewritten.
- 5. The clerical work force and data processing equipment are capable of handling the revised routines on a current basis.

To act in haste will only add to the administrative burden, diminish service to the members and increase the total conversion costs to the State.

# THE EXISTING LAW

Many of the problems in the operation of the System can be traced to the complexity of the law and the lack of well-documented supporting administrative policies and procedures. These two factors, coupled with a relatively high turnover of clerical staff and a rapid increase in membership and retirements during the period 1935 to 1967, have made the System difficult to administer.

The State Teachers' Retirement Law has been expanded and amended over the years on a "patch-work" basis. The present result is a law that is difficult to read or understand. The subject matter contained under certain articles of the law does not relate to the section in question. In many instances the wording is extremely lengthy and the intent of the law not clear. The requirements of certain prior laws, which were valid at the time of introduction, have been maintained in each succeeding law although they serve little purpose and add to the administrative problems of the System and employing agencies. The present law is not indexed and no reference is made to those sections of the prior laws still applicable to existing members.

Certain areas of the law presently permit the Retirement Board wide latitude in policy and decision-making. In other areas the law delves unnecessarily into detailed administrative procedures.

Inequities exist, with respect to members under the present law, which are not readily apparent to the reader unless he is very familiar with the construction of the law or is cognizant of the current administrative policies and actuarial assumptions used by the System.

# REWRITING THE LAW

We have concluded from our detailed study of the System and its effect on the counties that the present law should be rewritten to:

- Deferred changes to the law to remove inequities, and simplify the wording of the law by a complete rewrite of the law.

# 2. Proposed Plan

- Within the concept that members should pay for 50% of their currently accruing benefits.
- The introduction of a flat rate concept.
- New method to calculate service for substitutes and part-time teachers.
- Actuarial study to evaluate and cost our proposals.

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# 9. Accounting and Actuarial Operations

- Improved financial reporting to the System and the State.
- Annual actuarial valuation.
- Gain and Loss Analysis.

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# III - PROPOSED PLAN

We will show, in this chapter of the report, that the members pay considerably less than 50% of the cost of currently accruing benefits, that inequities exist under the law and that the current method of determining subventions to the local retirement systems results in additional costs to S. T. R. S. We will also present recommendations which are designed to improve the administrative and financial structure of S. T. R. S.

# MEMBER CONTRIBUTIONS

The contribution rates now in effect are not based on realistic projections of future salary. In addition, the present complex scale of contribution rates, as opposed to a simpler scale, greatly complicates the administration of the Retirement Law both within S. T. R. S. and within the counties. The contributions of members to the System vary by sex and entry age from slightly over 6% of compensation to slightly less than 12%. Since 1944 member contributions have been calculated with the intent of dividing equally between the members and the public the cost of future service retirement benefits. The use of such a graded contribution scale gives the members and others concerned with the financing of the Retirement System the false impression that the members are paying for 50% of their currently accruing benefits.

# (a) The 50-50 Concept

The "Declaration of Policy" set forth in Section 14215, subparagraph
(a), of the Education Code of California states, in part, that:

"All benefits in respect to service rendered after July 1, 1944, shall be provided approximately equally from members' contributions and public contributions," the latter consisting of "contributions by the State and contributions by school districts and employing agencies."

Section 14109 of the Education Code states that members' contributions shall be:

"based upon sex and age at the nearest birthday at the time of inclusion in or entrance into this Retirement System or at such later time as the member first is required to make annuity contributions, and shall be such as, when applied to the salary of the member, . . . will produce contributions which will provide, on the average, an annuity at age 60 equal to approximately one-half of the benefit . . . as determined by recognized actuarial methods."

The System has followed Section 14109 of the Education Code by using a set of member contribution rates varying by age and between males and females.

# (b) Actuary's Interpretation of the 50-50 Concept

In a letter to the Retirement Board, dated May 2, 1962, the actuary of the System, made the following comments:

"The Retirement Law provides that a member's rate of contribution to the Retirement Annuity Fund (are to) be determined actuarially on the basis that the member will contribute, on the average, one-half of the service retirement benefit payable from that fund. The law further provides that this benefit, for each year of credited service, shall be equal to one-sixtieth of the member's 'final compensation' when retirement is at age 60 and shall be actuarially equivalent (emphasis added) to this if retirement is at other than age 60. 'Final compensation' is defined as the average compensation for 36 consecutive months when the member's compensation was the highest. If these rates are to be determined, it is necessary that certain assumptions are to be adopted by your Board."

The actuary then proceeded to define the three basic assumptions which are necessary to compute member contribution rates. His description of a salary scale and the recommendations made to the Retirement Board, which were unanimously adopted, were as follows:

"A 'salary scale' is an actuarial 'tool' which is used to forecast the <u>probable future salary history</u> (emphasis added) of the members. The Retirement Board adopted new scales, effective July 1, 1959, and I see no reason to change them at this time. I therefore recommend that the present salary scales be continued . . . in the determination of member contributions rates."

Later in this letter, the actuary refers specifically to member contribution rates.

"The three items mentioned above (interest rate, salary scales and mortality tables) form the basis for the actuarial calculations of the member rates of contribution to the Retirement Annuity Fund. The increase in the interest rate from 3½% to 4% has a strong effect on those rates and reduces them substantially. The adoption of more convervative mortality tables (that is, the assumption of increased longevity) has the opposite effect; retention of the same salary scales (emphasis added), of course, would not change the rates (that is, would have no effect upon the rates of contribution)."

The present and proposed rates, as well as the reduction therein, resulting from the actuary's recommendations (which recommendations were unanimously approved) are shown below:

Member Rates of Contribution to Retirement Annuity Fund

	Males			Females		
Age at <u>Membership</u>	Present	Proposed	Reduction	Present	Proposed	Reduction
25	7.57%	6 . 50%	14.1%	8.16%	6.59%	19.3%
35	8.20	7.33	10.6	9.20	7,77	15.5
45	9.18	8.56	6.8	10.50	9.25	11.9
55	10.59	10.28	2.9	12.04	11.04	9.3

# EFFECT ON MEMBER RATES OF CONTRIBUTION TO SYSTEM

Male Entry Age	Present (Merit and Seniority Only)					Present + 3½% Improvement*	
		Rate	% Inc.	Rate	% Inc.	Rate	% Inc.
30	6.86%	8.28%	20.7%	9.42%	37.3%	10.71%	56.1%
35	7.33	8.38	14.3	9.37	27.8	10.42	42.2
40	7.90	8.52	7.8	9.29	17.6	10.09	27.7
45	8.56	8.75	2.2	9.31	8.8	9.88	15.4
Female Entry Age							
30	7.14%	8.32%	16.5%	9.58%	34.2%	10.94%	53.2%
35	7.77	8.69	11.8	9.76	25.6	10.87	39.9
40	8.47	9.11	7.6	9.94	17.4	10.80	27.5
45	9.25	9.52	2.9	10.12	9.4	10.74	16.1

<sup>\*</sup> Improvement means improvement in cost and standard of living.

### (c) Comments on Salary Scale

The salary scale referred to in (b) above is approximately equivalent to a geometric scale using the following increase rates from entry age to the assumed retirement age of 60:

Entry Age	Males	<u>Females</u>		
25	1 1/2%	6 1 %		
30	1 1/8	3/4		
35	1	3/4		
40	3/4	3/4		
45	1/2	3/4		

Salary Trends, City Public School Teachers, 1925-65 published by the Bureau of Labor Statistics in the United States Department of Labor sets forth statistics indicating the average rate of increase, over the past twenty years, for public school teachers in the Pacific States (California, Oregon, Washington, Hawaii and Alaska) has been approximately 5½% per annum, compounded, for the average teacher (see Exhibit A). It is thus clear that the salary scale now in use would, if used twenty years ago to forecast today's salaries, have fallen far short of the mark; it is likely that using it now to predict "probable future salary history" will result in similar understatements of the salaries on which retirement allowances will be based in the future. The tables shown opposite indicate the approximate effect on the current scale of member contribution rates if the interest and mortality assumptions were left unchanged, but the salary scale was changed. The changes in the salary scale reflect improvements

in the cost and standard of living as well as increases due to seniority and merit (which the Executive Officer of the System has told us are the only causes of salary increase recognized in the existing salary scales used by the System).

# (d) Effect of Higher Interest Rate

If a higher interest rate can be assumed in contemplation of a more aggressive investment policy in the future, a considerable part, or perhaps all, of the increases shown in the preceding illustration could be eliminated. In the Investments and Investment Administration Chapter XIV we describe several ways of accomplishing such a result through the use of more diversified investment policies and procedures.

# (e) An Alternative to Payroll Deductions

As membership in S.T.R.S. is compulsory for all teachers in a status requisite for membership and as a teacher has no choice but to make the required contributions we propose that consideration be given to an alternative to payroll deductions.

For example, a single female teacher who is employed on a full-time basis, enters the System at age 25 and is now age 35 and currently receives a salary of \$8,000 per year. This teacher contributes to the System at the rate of 6.59% of salary, which is \$527.20 per year. Assuming that this teacher has no dependents and no other income and takes the standard 10% deduction, her Federal income tax at current rates is \$1,280 per year, and her California income tax is \$96 per year. Thus her salary less income taxes and System contributions if \$6,096.80 per year.

It would be possible for a school district to remit direct to the System the member contributions for all teachers in the district and reduce the amount of cash salary paid to each teacher by the amount contributed. Under this approach, benefits and contributions under the System would continue to be based on total compensation, including cash salary and contribution to the System. If this were done, the teacher's income tax would be levied on cash salary rather than on cash salary plus contribution to the System, assuming that a favorable ruling is secured from the Internal Revenue Service. In the example under consideration, the teacher's cash salary would be reduced by \$527.20, i.e., from \$8,000 per year to \$7,472.80 per year. Making the same assumptions as before, the teacher's Federal income tax would be reduced to \$1,161.38, and her California income tax would be reduced to \$81.77. Her cash salary less income taxes would now be \$6,299.65. Thus, her disposable income is increased by \$132.85, which is 2.2%.

Upon termination of employment the refund to the teacher would constitute ordinary income. However, it could be entitled to long term capital gain treatment if the System's plan were qualified under the Internal Revenue Code. In the aggregate, taking this step would increase the disposable income of California teachers by many millions of dollars. It is therefore well worth initiating an investigation to include a thorough review and analysis of any legal and administrative problems and the securing of a special ruling from the Internal Revenue Service.

# (f) Voluntary Contributions

A member may augment his benefit by contributing either to the Annuity

Deposit Fund or to the Shelter Contribution fund. Contributions to neither of

these funds are matched or increased by State or district contributions. Prior

to 1944 the Annuity Deposit Fund was a mandatory plan for teachers, and was designed to allow the teacher to supplement the limited Permanent Fund allowance. Since it became voluntary in 1944, however, the popularity of the fund has dwindled. Last year contributions totaled only \$17,000 contributed by only fifteen members (one member contributed \$10,000). Refunds exceeded contributions by over 150%.

The Shelter Contributions, after being in existence for four years, serve only 318 contributing teachers, approximately one-tenth of 1% of the active membership. Only seven counties have more than ten participants.

Nationwide, only six teachers' systems offer a tax-sheltered annuity plan, and less than half of the state systems offer any form of voluntary plan. These voluntary plans have remained relatively unpopular particularly because of the lack of merchandising. Competing private insurance carriers sell their products aggressively, whereas the System merely makes the plans available.

The System currently is not equipped, nor would it necessarily be desirable for it, to aggressively pursue member participation in these voluntary plans.

The System must maintain records and establish procedures to administer these voluntary plans. Individual accounts must be created on the assumption that anyone at any time can contribute to either or both of these plans, and the monies must be separately accounted for. The administrative costs of these plans outweigh the service rendered to the members. As determined by our review, the approximate direct cost per contribution to the System under these two plans in the past fiscal year was approximately \$7.50 per active contributing member. In comparison, the direct cost to maintain a regular member per year is about \$.60.

#### (g) Recommendations

In view of the above, we recommend that:

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# POSSIBLE RECOMMENDATIONS REGARDING MEMBER CONTRIBUTIONS

- 1. Take no action; i.e., allow S. T. R. S. to proceed as at present on the theory that "recognized actuarial methods" do not necessarily involve recognition of inflation.
- 2. Retain the 50-50 concept, but amend the law to make it clear that inflation is not to be recognized in calculating contribtion rates.
- 3. Enforce compliance with the 50-50 concept; i.e., call upon S. T. R. S. to recalculate member contribution rates using a salary scale recognizing not only seniority and merit increases but also expected increases from general inflation of salary rates.
- 4. Abandon the 50-50 concept.
- 5. Make no current changes in the law, but initiate a study leading to the adoption of a level contribution rate to be incorporated into the law by subsequent amendment.

- 1. The State Teachers' Retirement Law be amended to make it optional, rather than compulsory, that rates vary by age and sex.
- 2. An actuarial study be made to develop a flat contribution rate for all members, retaining as a matter of general policy the 50-50 concept as directed by the Joint Legislative Retirement Committee on March 23, 1967 (see facing page for a list of the five alternatives presented to the committee).
- 3. If the flat contribution rate study demonstrates that a uniform rate for all ages is not feasible, or not desirable, a schedule of rates varying by sex and broad entry age groups be developed, still however, retaining the 50-50 concept.
- 4. Consideration be given to direct remittance by the employing agency of member contributions, coupled with corresponding cash salary reductions of equal amount, in lieu of payroll deductions. Making such a procedure most advantageous would require that the plan be qualified under the appropriate sections of the Internal Revenue Code.
- 5. Voluntary contributions be discountinued. Members with contributions on account (nearly 10,000) could be given the option of obtaining a refund with interest, or turning over their accumulated contributions to an insurance company, which would maintain these accounts under a group annuity plan.

#### DEATH BENEFITS

The basic death benefits available to members of the System who die prior to retirement consist of the Permanent Fund contributions and the other accumulated contributions with interest standing to the member's credit at death plus an additional amount equal to one-twelfth of the member's final salary for each year of membership service. In no event can the number of years of such service used exceed six.

# (a) Conditions Under Which Payable

Death benefits are payable if death occurs prior to retirement and.

- 1 While in active service, or "within four months" of the last day of employment (see Section 14251 of the Education Code); or
- 2. While the member is "physically or mentally incapacitated . . , if such incapacity" was continuous from the last day for which compensation was paid (see Section 14251); or

- 3. While in military service provided time in military service is creditable under the System (see Section 14254); or
- 4. While on a leave of absence provided death occurs "within 18 months after the last day for which" salary was paid (see Section 14254); or
- 5. "Within six months of his last day of service if an application for retirement . . . was received . . . (within) four months" from the last day of service and no benefit is payable under an option (see Section 14254); or
- 6. "If no other benefits are payable under this chapter (Chapter 4 of Division 10 of the Education Code of California) upon the death of a member."

The sections of the Code described above, coupled with other complex provisions, apply to pre-retirement death benefit.

#### (b) Inequity

Since the normal form of retirement allowance under the Retirement System is a straight life annuity without death benefit, it is quite possible that an individual's beneficiaries or estate could be entitled to a large benefit if he dies on a given day, but no benefit if he dies on the following day.

# (c) Practice in Private Retirement Plans

It is the almost universal practice in contributory private and public retirement plans (that is, where the employees help finance the plan's costs) to give every member a money-back guarantee to ensure that no matter what happens the total amounts paid to him or his beneficiaries (or estate) will always be at least equal to his contributions plus interest.

### (d) Recommendations

We recommend that:

1. The normal form of allowances be a "modified cash refund annuity" which provides a death benefit equal, at any time, to the excess of the member's

accumulated contributions at retirement over the sum of the allowance payments received by him.

2. The money-back guarantee be extended to the optional forms of settlement in order to make them consistent with the recommended normal form.

# REFUNDS, REDEPOSITS AND RE-ENTRY

A member of the System who terminates his teaching service in California, other than by death or retirement, may elect to withdraw all his contributions made for service rendered subsequent to July 1, 1935.

#### (a) Background

There is no minimum service requirement which a teacher must satisfy in order to be able to withdraw his accumulated contributions. The amount of the refund is equal to the mandatory contributions made subsequent to July 1, 1935, to both the Permanent Fund and the Retirement Annuity Fund, plus any voluntary annuity deposit and/or Shelter Contributions. In addition, interest is paid on all contributions to the Retirement Annuity Fund, but pursuant to Section 14151, subparagraph (a), of the Education Code no interest is paid on the mandatory Permanent Fund contributions made after July 1, 1935. Thus, the member who makes large contributions resulting from his having a large salary (or a high contribution rate) receives a higher interest return, averaged over his entire contribution, than does the teacher making smaller contributions.

A member who withdraws his accumulated contributions loses the benefit of contributing, in the event of a future re-entry and redeposit, at his prior contribution rate (such prior "rate-age" being based on his sex and age at original entry into the System, or age on July 1, 1944, if later). If a person whose contributions had been returned re-enters the System, he may elect to redeposit the returned contributions only after he has rendered two

full years of creditable service subsequent to his re-entry. The redeposit must include interest at the rate or rates declared by the Retirement Board for the period elapsed between the date of withdrawal and the date of redeposit.

#### (b) Inequities

If the re-entering member does redeposit his previously withdrawn contributions, plus interest, his new contribution rate is based on his age at the time of refund. Based upon the preceding, the existence of certain obvious inequities can be demonstrated:

- 1. Two teachers of the same age terminate and withdraw their accumulated contributions; one has a long period of service, and the other has a short period of service. Both teachers re-enter the System on the same date and redeposit their accumulated contributions plus interest to the date of redeposit; both resume contributions, after having made the redeposit, at the same rate, which is based on the age at the time of refund. This practice produces a much greater increase in the rate of contribution for the member with long service than for the member with short service because the former had previously been contributing at a rate based on a much lower entry age.
- 2. Two teachers with identical service and age terminate and reenter simultaneously. One teacher elects to withdraw his contributions at termination and redeposits two years after re-entry. The other teacher elects to leave his money with the System. The first teacher is required to bring his accumulated contributions to the same level as the second at a specified time after re-entry but from that point he contributes at a rate based on the age at which he received the refund, whereas the second teacher resumes contributions at his former rate based on his age at original entry (or, if later, his age on July 1, 1944).

#### (c) Effect of Redepositing

Whenever a member withdraws his contributions upon terminating and redeposits said contributions plus interest upon re-entry into the System, the System has incurred a loss with respect to him (as compared to the member who left his money in the System). This loss results from the excess interest earnings which the System would have realized if his contributions had remained invested as part of the System's assets. Hence some justification exists for differentiating between the two members described above; but a more equitable procedure could, and should, be employed.

In addition to the loss of excess interest earnings incurred by the System under these circumstances, substantial administrative expenses are incurred as a result of withdrawal and re-entry into the System.

### (d) Effect of "Buying-In"

A situation analogous to that described in (c) above arises whenever a member of a local retirement system "buys-in" at retirement. The System allows the member with local retirement system service to "buy-in" by depositing an amount equal to that which his contributions would have accumulated in the System using the basic interest rate or rates, declared, pursuant to Section 13856, by the Retirement Board. Since the basic rate used to credit interest on members' contributions is generally less than the rate actually earned by the System, the System incurs a loss whenever a "buy-in" occurs.

### (e) Effect of Subventions

In calculating subvention payments to local systems it is assumed by the System that the member's contributions would have accumulated at exactly the basic rate. No consideration is given to the fact that the System would have earned excess interest on the member's contributions during the period of time that he contributed directly to the local system. The result of the above is that subvention payments are excessive to the extent of such loss of excess interest earnings.

#### (f) Recommendations

Notwithstanding the aforementioned inequities with respect to member contributions, we recommend that no action be taken to amend the law to remove inequities, because the proposed flat rate contribution system will accomplish this automatically. We further recommend that:

- 1. The interest rate used in determining refunds to members and their beneficiaries be a rate established annually by the Teachers' Retirement Board. The Board should set the rate annually at a figure generally below the rate currently being earned by the System. A specific limitation should be included in the law stating that in no event may the Board declare a rate which exceeds the System's average rate of investment earnings over the preceding three years.
- 2. In calculation of refunds, interest be credited on all member contributions, including the first \$60, and that this be done as to the future only.
- 3. Since a considerable amount of administrative expense is involved in processing short-term terminations of employment, refunds in the event of such termination include only a graded percentage of the interest credited to the member's account if contributions are refunded during the first five years of participation in the System. The scale of percentages is 20% in the second year, 40% in the third year, 60% in the fourth year, 80% in the fifth year and 100% in the sixth and subsequent years. This recommendation applies only to members entering the System in the future.
- 4. Such forfeited interest be reflected as an increase in an expense reserve, such reserve to be used to help defray the administrative costs of the System.
- 5. If a member redeposits his previously withdrawn contributions, the rates of interest used in calculating the amount which he is required to redeposit be approximately equal to the rates of interest actually earned by the System during the period of his absence. In addition, we recommend that the same procedure be employed in determining the cost of "buying-in" voluntarily for local retirement system service.
- 6. In calculating subvention payments, the hypothetical amount which would have been accumulated by the System had the member not been in the local retirement system be calculated using the experienced interest rates rather than the refund interest rate, thus placing the System in almost exactly the same position it would have been in had the local retirement system never been established. This would produce a reduction in the amounts subvened to the local retirement systems.

# PART-TIME AND SUBSTITUTE TEACHERS

Part-time and substitute teachers who satisfy the conditions requisite for membership in the System are required to participate in the System on the same basis as full-time teachers.

### (a) Eligibility

As stated in Section 14001 of the Teachers' Retirement Law, a sub-

stitute teacher cannot become a member of S. T. R. S. until he or she has rendered 100 days of service in a school year. Likewise, teachers employed on a part-time basis and who render less than 24 hours, or less than four days, per pay period are ineligible for membership. Similarly, adult education instructors are excluded from membership until they satisfy specific service requirements. The existence of such requirements imposes a burden on the counties as they must retain records of hours and/or days worked by people falling within the above mentioned classifications.

#### (b) Benefits

The determination of retirement benefits under the existing system is extremely complex, for one reason, because of the problem involved in determining service, as mentioned above. Two parallel calculations must be performed at retirement:

- 1. A retirement allowance based on final average compensation, sex and age at retirement, and credited service as a full-time member (if any).
- 2. An additional retirement allowance based on an "adjusted" final average compensation, sex and age at retirement, and credited service as a part-time or substitute member.

#### (c) Recommendations

To alleviate the above problems, we propose that:

1. The S. T. R. S. Board develop for inclusion in the law a different set of eligibility requirements for substitute and part-time teachers (including adult education teachers). The new basis will require that the person satisfy certain earnings requirements. The stipulated earnings requirements would be adjusted by the Board each year by means of the "salary trend factor" described below. The earnings requirements should be such that the only people excluded thereby are those who would probably never qualify for retirement benefits under the System. To exclude others would have a financially harmful effect on the System as these people can "buy-in" for excluded service, upon eventually satisfying the eligibility requirements, but the employing agencies do not contribute to S. T. R. S. with respect to such excluded service.

Eligibility based on earnings, rather than hours or days worked, could be easily determined by S. T. R. S. from data supplied under the normal method of reporting contributions, rather than requiring the counties to keep records of hours and days.

# ILLUSTRATION OF CALCULATION OF TOTAL ADJUSTED EARNINGS

Year	Member's Actual Credited Earnings	Average Teacher Salary	Salary Trend Factor	Total Adjusted Earnings*
1967	\$3,000	\$10,000		\$ 3,000
1968	6,000	10,500	1.050	9,150 (6,000 + 1.050 X 3,000)
1969	2,000	11,000	1.048	11,589 (2,000 + 1.048 X 9,150)
1970	5,000	11,500	1.045	17,111 (5,000 + 1.045 X 11,589)
1971	4,000	12,000	1.043	21,847 (4,000 + 1.043 X 17,111)

<sup>\*</sup> Equal to (Member's Actual Credited Earnings for current year) plus (Salary Trend Factor) X (Total Adjusted Earnings for prior year).

2. In order to simplify the methods of handling records for parttime and substitute teachers and to make the criterion for eligibility for membership consistent therewith, we recommend that the benefit for future service for part-time and substitute teachers be defined as one-sixtieth of "Total Adjusted Earnings." A member's Total Adjusted Earnings as of the end of any year consists of his "Credited Earnings" for that year plus his Credited Earnings for prior years adjusted to the current level by applying, to the earnings of such prior years, a "salary trend factor" based on the average salary of all full-time teachers in California. Credited Earnings consist of 100% of part-time earnings plus 120% of substitute earnings. The trend factor used in a given year is the ratio of the average salary of full-time teachers in California for the year in question to the similar figure for the preceding year. Thus, "Total Adjusted Earnings" at the end of a year is defined as:

(Total Adjusted Earnings for previous year) X (Salary

Trend Factor) + (Current Year's Credited Earnings)

The effect of this procedure is to update earnings for all prior years to current levels; i.e., develop an estimate of what the member's total earnings to date would be if he had always been paid at the typical rates in effect today. Defining his benefit as one-sixtieth of Total Adjusted Earnings makes his benefit consistent with that of the full-time teacher and does so with a minimum of administrative expense.

On the facing page is an illustration of the method to be employed in the calculation of Total Adjusted Earnings.

### SUMMARY OF RECOMMENDATIONS AND ADVANTAGES

The major recommendations which we have made in preceding parts of this chapter and some of the advantages resulting therefrom are summarized in this section.

#### (a) Summary of Recommendations

The recommendations shown below will have a significant impact on the System and its members. Briefly, we recommend that:

- 1. An actuarial study be performed, the most important purpose of which is, to develop a flat contribution rate for all members. The items to be analyzed in the actuarial study would include, but would not be limited to:
  - the feasibility and desirability of a flat contribution rate
  - the cost implications of the proposed method of determining benefits for future part-time and substitute teachers

- the probable cost of providing a modified cash refund annuity as the normal form of retirement allowance
- a projection of the State's costs under the various proposals
- an allocation of the contingency fund
- the effect of crediting interest on all contributions
- the effect of a revised method of determining subventions and "buy-ins"
- the probable interest forfeitures resulting from our recommendation of gradual vesting of interest
- 2. The normal form of allowance be a "modified cash refund" annuity.
- 3. Subventions and "buy-ins" be calculated in such a way that S. T. R. S neither gain nor lose as a result of these actions.
- 4. The records of part-time and substitute teachers be handled in a manner differing from the method used for full-time teachers.
  - 5. Voluntary contributions to the System be eliminated.
  - 6. Interest be credited on all contributions.
- 7. Non-vested interest be used to defray the administrative costs of the System.
- 8. Consideration be given to direct remittance by the employing agency of member contributions, coupled with corresponding cash salary reductions of equal amount, in lieu of payroll deductions.

### (b) Summary of Advantages

The advantages of the proposed plan can be summarized as follows:

- 1. Advantages to the members -
  - increase disposable income significantly
  - greatly simplified contribution structure
  - removal of inequities
  - potential for decreased contribution rates
  - interest credited on all contributions
  - money-back guarantee through modified cash refund annuities
  - possibility of capital gains treatment of lump-sum distributions from System

- 2. Advantages to the System -
  - simplify record keeping
  - eliminate need for records on voluntary contributions
  - reduce, or eliminate, rate request correspondence
  - simplify treatment of part-time and substitute teachers
- 3. Advantages to the State, School Districts and Employing Agencies -
  - partial financing of administrative costs
  - reduced cost of subventions
  - ease administration at district level
  - closer adherence to the 50-50 cost-sharing concept



#### IV - FUND STRUCTURE

Fund structure not only relates to accounting, but to the way in which the members' contributions are actually used by the System to provide benefits. The present methods and structure are largely a product of evolution, resulting from a succession of changes to the law. The treatment of members' contributions needs to be simplified.

#### HISTORICAL BRIEF

The following events have had a direct cumulative effect on the present accounting and fund structure:

- 1. Prior to 1944, the members contributed a flat yearly amount to the Permanent Fund. Initially, the amount was \$12 per year. Contributions in 1935 were raised to \$24 plus \$12 per year per member contributed by the employing districts. The State contributed 5% of inheritance tax collections. As benefits were small, members entering the System after 1935 were required to supplement these contributions by depositing 4% of their salary, less \$24, to an Annuity Deposit Fund. Members of the System prior to 1935 could do so on a voluntary basis.
- 2. In 1944 an expanded benefit plan was established and members were required to contribute, in addition to the Permanent Fund (now \$60), a percentage of their salaries to the Retirement Annuity Fund which was expected to provide approximately 50% of the additional benefits. There was much discussion of funding at that time, but the Legislature established a token \$30 million Special Investment Fund. The State was to provide all benefits not available from assets of the System. This resulted in four separate and distinct funds: Permanent, Annuity Deposit, Retirement Annuity and Special Investment. The Annuity Deposit Fund became voluntary at that time.
  - 3. In 1956 a new benefit formula was adopted.
- 4. In 1957 the Legislature utilized the Special Investment Fund to cover current outlays, thereby eliminating the small amount of State Funding. Also, the several separate funds were combined into one fund, the Teachers' Retirement Fund, but the reserves in the new fund remained intact and the accounting treatment of the funds was largely unchanged.
- 5. In 1959 Permanent Fund contributions and interest which according to the law "are not required for the future payment of annuities, refunds, and death benefits" had accumulated to nearly \$17 million in a separate reserve referred to as the Other Permanent Fund. In exploring

methods of financing a new Survivor allowance it was decided by the Legislature to use the Other Permanent Fund until it was exhausted.

6. In 1963 a supplemental voluntary contribution plan was commenced called Shelter Contributions, which allowed a member to enter into a contract with his employer to withhold a portion of his salary and purchase an annuity from the System with these monies.

The above listing of events is by no means exhaustive. The effect, however, of the combination of such changes has resulted in a highly complex accounting structure with a correspondingly involved members' record keeping system.

#### FINANCIAL REPORTING

It is important that the State and the public obtain a clear picture of the financial status of the System. The System has provided limited information on its financial activities. The annual report of the System as of June 30, 1966 included only a comparative statement of income and outflow and did not contain a current statement of assets and liabilities.

The statements of assets and liabilities of a retirement system should reflect the liabilities recognized for all benefits payable from the System. In contrast, the statements of the System merely account for the money received and disbursed. The balance sheet included in the System's work papers for June 30, 1966 shows 14 separate reserves relating to members' contributions, the meaning of which could not be clear unless the reader was fully familiar with the law.

There is no provision in the annual report of the Board or in the balance sheet to show the accruing liability of the State for future benefits. The recognition of this accrued liability is not necessarily synonymous with advanced funding of the amount due, but is is good accounting practice to recognize the amount of unfunded liabilities. As of 1954, determined by the actuarial cost method then in use, the unfunded liability of the System was

in excess of \$1 billion. In 1964 the corresponding amount was approximately \$2 billion and undoubtedly since has increased. The present liability can only be determined through an updated actuarial valuation. We hold that an elaboration of the progress of the unfunded liability should be shown as it evolves each year.

Our recommendations regarding financial reporting are included in the Reporting paragraph of Chapter XIII entitled Accounting Division.

#### CONTINGENCY RESERVE

The Contingency Reserve (referred to by the System as the Net Interest Reserve) exists "as a reserve against deficiency in interest earned in other years, losses under investments, and other contingencies," as stated in Section 13856 of the Law. This reserve presently amounts to approximately \$41 million.

# (a) Elements of Contingency

In general, contingency reserves are held to guard against unforeseeable and, in the short run, uncontrollable losses to a system. The System is faced with three major contingencies:

- 1. <u>Investment experience losses</u> interest insufficiencies and losses on sale of bonds.
- 2. <u>Mortality experience losses</u> occur when mortality is lighter than is expected.
- 3. <u>Salary experience losses</u> losses resulting from salary increasing more rapidly than expected.

The System, in the past, used the Contingency Reserve only to cover investment losses. As interest insufficiencies relate to the rate of interest set by the Board for crediting members accounts, the Board can control losses extending for over one year. As a matter of practice, the Board has never

established an interest rate that resulted in an interest insufficiency.

Mortality experience loss and salary loss could not have been accurately measured without the inclusion of a gain and loss analysis in the actuarial valuation procedure. No attempt has been made to measure the mortality experience loss or the salary experience loss in dollar terms. Without doubt, the single greatest source of loss to the System has been adverse salary experience.

It is not difficult to demonstrate that such loss is far in excess of the Contingency Reserve. Since 1962, when the current contribution scale was established, member contributions (net of refunds) have been in excess of \$425 million. If an allowance for inflation of only 1% had been used in calculating these contribution rates, the rates would have been approximately 10% higher and the additional contributions increased over \$40 million. As we have previously indicated in Chapter III, the average rate of increase, over the past twenty years for public school teachers in the Pacific States, has been approximately  $5\frac{1}{2}$ % per annum. Therefore, the salary experience loss on current contributions alone has been far in excess of \$41 million.

### (b) Uncredited Interest

Approximately \$15 million of the Contingency Reserve has arisen artificially from an unintentional difference in accounting treatment versus contribution formula. The practice, which is common in systems of this type, has been to credit the members' reserves annually with the interest on the balance at the end of the previous fiscal year. The method of calculating contribution rates assumes that interest will be credited at the end of each month, thereby including interest on current contributions. Had interest been credited monthly, the Contingency Reserve would now be approximately \$26 million.

#### OTHER PERMANENT FUND

Interest on Permanent Fund contributions is forfeited at death or withdrawal from the System. No permanent Fund contributions made prior to 1944 are used to provide annuities. Furthermore, contributions made prior to 1935 are not refundable upon death or termination. The amount from these sources, with interest, totals \$23 million after payment of \$3 million Survivors' allowances to date. These monies arose from contributions of members who had previously retired (\$17 million). The remainder (\$6 million) arose equally from active members and from members who have previously forfeited upon termination by death or refund.

When Survivors' allowances were instituted in 1959, the Other Permanent Fund was chosen as the source of all benefits. This was a convenient method of using funds which would otherwise have increased without use. A further advantage was that Survivor allowances could be provided with no immediate outlay to the State. There is, however, virtually no connection between the teachers who have contributed to this fund and those persons now receiving benefits from it. Based on projections we have made of income and outflow to this fund, the State will incur the entire Survivors' obligation by 1984. At that time the annual outlay will approximate an additional \$5 million per year to the State. Should these benefits be liberalized in the meantime, the time span will be shortened and the rate of cost to the State will increase. The State therefore is accruing a liability for the cost of Survivors' allowances at the present time which is not apparent from financial statements of the System.

### RECOMMENDED RESERVE STRUCTURE

In recommending a revised reserve structure the major objectives are to:

### STATE TEACHERS' RETIREMENT SYSTEM

# SOURCE AND USE OF PROPOSED RESERVE STRUCTURE

RESERVE	SOURCES	USES	
Active Members' Reserve			
Members' contributions	Members' contributions	Reserves for benefits in force	
	Interest subject to refund	Refund to member or beneficiary	
		Interest (partial) to administrative expense reserve if refund under 5 years	
Excess interest accumulation	Interest on reserve over refund rate	Reserves for benefits in force	
Reserves for benefits in force			
Retired members and one- half continuance beneficiaries	Members' contributions  Excess interest accumu- lation (Transferred from above)	Annuities  Refunds of contributions  over benefits at death	
	Interest earnings (Experienced rate)		

- 1. Make more effective use of the assets of the System.
- 2. Simplify accounting records and systems.

Present more clearly the true financial picture of the System.

Based on these recommendations, the Teachers' Retirement Fund should include two major reserves and subaccounts:

- 1. Active Member Reserve consisting of all funds held with respect to:
  - actively employed members
  - members who are not actively employed but have left their contributions in the System

The subaccounts for this reserve would be:

- total member contributions plus interest credited for refund purposes
- excess interest accumulation
- 2. Reserve for Benefits in Force consisting of all funds held with respect to persons receiving benefits.

The subaccounts for this reserve will be:

- payment of annuities to retired members and their beneficiaries
- payment of one-half continuance allowances

The facing page indicates the sources and uses of the above described reserves and subaccounts.

### REDISTRIBUTION OF RESERVES

To accomplish these changes, we recommend the redistribution of the existing reserves, as shown graphically in Exhibit B. In summary these changes would be:

- 1. Redistribute all Permanent Fund reserves. Combine all contributions in these reserves with present retirement annuity reserves to form the Active Members' reserves. All interest not refundable under the present law will be credited to the members' excess interest accumulation subaccount. Reallocate the Other Permanent Fund reserve in proportion to the contributions made on an historical basis.
- 2. Redistribute the Contingency Reserve. Allocate to the retired members' reserve an amount necessary to offset the deficiency in that reserve

resulting from unrecognized experienced salary losses and the failure to credit interest in the year contributions were made. The remaining amount should be transferred to the Active Members' Excess Interest Accumulation subaccount. The exact proportions for distribution can only be determined when the recommended actuarial study is performed. This will correct the failure in the past to use the Contingency Reserve for all the purposes which justify its existence, particularly salary losses.

# CONTRIBUTION OF THE STATE REDEFINED

The contribution of the State should be redefined as follows:

- 1. With respect to retired members, the excess of total retirement allowances over the sum of "adjusted total member annuities" and county contributions. "Adjusted total member annuities" is determined by applying to total member annuities the ratio of the balance in the retired member subaccount to the actuarially determined liability for retired member annuities.
- 2. With respect to survivors' allowances, the total allowances payable.
- 3. With respect to one-half continuance allowances, the excess of allowances payable over the amounts provided by the deceased members' accumulations.
- 4. With respect to the death benefits, all benefits which are not an inherent part of the retirement allowance, except those refunds to beneficiaries of active members.
- 5. With respect to the active member reserve, the amount required, if any, to bring the amount in this reserve to the level of total refundable contributions. Because of the restrictions on the refundable interest rate, as recommended in the previous chapter, the possibility of the State contributing under this clause would be remote.

By such a revision we have placed upon the State the responsibility to cover losses to the System for all contingencies. We eliminate the need for a Contingency Reserve, but do not materially increase the State's already existing obligations. What will be accomplished is to put the funds of the System to maximum effective use in closer accordance with the 50-50 concept.

# CONTRIBUTIONS OF SCHOOL DISTRICTS AND OTHER EMPLOYING AGENCIES REDEFINED

Two separate methods of contributions are currently in use, (1)

3% of salaries of members up to a limitation based on assessed valuation, payable monthly, and, (2) \$12 per year per member payable semi-annually. The latter method is based on the procedure which was used prior to 1944 for the assessment of Permanent Fund contributions. Monies received by these procedures are merged together for paying allowances.

We recommend that one method of contribution be adopted; namely method (1) above. The percentage contribution rate should be increased so as to make the total contributions equivalent to the total now received by the two methods. Also, the valuation limitations should be raised proportionately so that those counties which have reached their limitation do not benefit at the expense of those which have not.

#### SUMMARY

The present law and accounting methods in use for the treatment of member contributions and the payment of benefits have become highly complex. This is because of the cumulative effect of a series of changes to the System over the years. The present financial reporting of the System is inadequate. The present reserves structure should be redistributed to make more effective use of the System's assets and to simplify and present more clearly a financial picture of the System. The results of the proposed changes will be a reduction in the annual appropriation of the State without in any way diminishing the members' allowances or reducing the refundable contributions of members. It is impossible to measure the immediate impact on the State's contribution until the portion of the Contingency Reserve to be distributed to the retired members reserve is determined. We estimate the reduction should be in the magnitude of \$1 to \$3 million per year depending on the eventual apportionment of the reserve.

outlay approximately \$200,000, by using these funds for annuities in place of survivors' allowances. However, as survivors' allowances increase, this reduction in outlay will become an increase in outlay in two to three years.

#### V - LOCAL SYSTEMS

There are two local teachers' retirement systems in the State, one in San Francisco and one in Los Angeles. These systems operate within the framework of certain sections of the Education Code. We were requested to evaluate the effect of local systems on S.T.R.S. and to analyze the impact of subventions in terms of cost and fairness. Furthermore, the opinion exists within the System's administration and in other State agencies that local systems unnecessarily duplicate the facilities of S.T.R.S. and should be abolished.

# EFFECT OF LOCAL SYSTEMS ON S.T.R.S.

- S.T.R.S. must maintain records on local teachers which are fully as extensive as if they were fully non-local. Furthermore, additional procedures are required for local teachers; for example:
- 1. Movement of teachers in and out of local systems makes it necessary to record a mixture of local and non-local service. The members records cannot be separated but the service must be segregated.
- 2. Ability of teachers in local retirement systems to "buy-in" increases the volume of redeposits.
- 3. S.T.R.S. accepts members who are otherwise ineligible for local system membership.
- 4. Additional time and work are required to compute benefits and subventions for teachers.
- 5. Additional accounting is necessary to determine the aggregate annual subventions payable.

These types of exceptions constitute a definite nuisance factor to S.T.R.S. The only procedure which can reasonably be assigned an additional cost, however, is item (4) above; this amounts to approximately \$4,000 to \$6,000 per year.

We have concluded that the existence of local systems is not a major burden on S.T.R.S. and that no significant administrative impediments would result if local systems were abandoned or merged into S.T.R.S.

#### SUBVENTIONS

Two distinct sections of the Education Code describe subventions as they apply to the City of Los Angeles and the City of San Francisco.

### (a) Los Angeles

The intent of the subvention to Los Angeles is to place S.T.R.S. in the same position it would have been in had there been no local systems. That is, the State currently subvenes an amount equal to the pension it would have paid directly to the member. Prior to February 1, 1965, when the "Buck Plan" was established, the subvention to Los Angeles was determined on the same basis as applies to San Francisco.

#### (b) San Francisco

The subvention, as it relates to San Francisco, is calculated on the assumption that the member pays for 50% of the retirement allowance based on service rendered subsequent to July 1, 1944. As we discussed in Chapter III of this report, the inadequacy of the current contribution rates results in members contributing considerably less than 50% of the cost of current service benefit accruals.

The result of these two methods of calculating subventions is that a serious inequity exists against the City of San Francisco.

As was discussed in Chapter III, Proposed Plan, subventions have been unfair to the State because excess interest earnings were not realized

### (c) Proposed Subvention Basis

In order to remove the inequity between the two local systems and to

put the State in a position whereby it neither gains nor loses as a result of their existence, we propose two basic changes:

- Subventions to Los Angeles and San Francisco be computed on the same basis.
- 2. Subventions be calculated on the basis of an interest rate approximately equal to the actual investment earnings rate of the System, instead of the refund rate as is now the case.

# CONTINUED EXISTENCE OF LOCAL SYSTEMS

In our opinion, the local systems clearly are a duplication of effort.

The cost of this duplication falls largely to the taxpayers of the local districts.

The issues and problems to be resolved are complex, and some are political in nature.

### (a) Steps Toward Solution

The State should urge that a plan be adopted to merge the local and S.T.R.S. systems. This should be accomplished by the voluntary formation of representatives of the locals and of S.T.R.S. to settle mutually the many problems. These problems, as outlined below, must be resolved before any definitive steps can be taken. As the local taxpayers will receive the larger benefits from such a merger and as most of the problems are in alignment of local provisions with State provisions, initiative of the local representatives is most important.

### (b) Issues to be Resolved

A number of significant issues must be resolved before conclusions and a plan of action can be set forth. Some of these are:

- 1. Can the many differences in various provisions of the plans be equitably reconciled, for example:
  - the definition of average earnings on which retirement allowance is based
  - the amount of service creditable

- vesting provisions and minimum service
- allowance formulas
- contribution rates
- disability allowances
- death provisions
- 2. Can the teachers under Social Security in San Francisco be integrated into S.T.R.S.?
- 3. Can the City Charter of San Francisco be amended to exclude the teaching profession from the local retirement system?
- 4. Can the accumulated funds of the Los Angeles city system, which has come in part from local taxpayers, be disposed of equitably?
  - 5. Can adequate service be provided to local members?
  - 6. Can records of service between the system be reconciled?
- 7. What would be the impact on the organization and operations of local system staffs?
- 8 What are the desires and attitudes of local taxpayers and their representatives?

It is not within the scope of this report to measure the effect on local systems of the changes recommended in this report. Since, however, the changes may prove to have a substantial impact on the local systems, this may be an appropriate time to form the recommended committee.

#### SUMMARY

In summary our conclusions are:

- 1. Local systems do not constitute a major problem to S.T.R.S. Additionally, no impediments exist should local systems be abolished.
- 2. Subventions should be changed to provide equity to the State and between the local systems.
- 3. A voluntary committee should be formed to study the many issues and to formulate a program of merger.

### VI - IMMEDIATE CHANGES TO THE LAW

It is essential that some changes be made to the existing law and that these changes be introduced during the current session of the Legislature. The proposed changes are designed to:

- 1. Reduce the administrative work load of the System and the employing agencies.
  - 2. Improve the financial position of the System and the State.

The proposed changes which have been reviewed by the Legislative Council and handed to Assemblyman E. Richard Barnes prior to April 11, 1967 are outlined in the following paragraphs.

# STATE TEACHERS' RETIREMENT LAW - SECTION 13861

We propose that Section 13861 be modified to permit the use of revised methods to determine member service for substitute and part-time teachers prior to July 1, 1956.

We submit that Section 13861 should state:

"Service rendered prior to July 1, 1956, shall be credited according to the provisions of this chapter (commencing with Section 13801) which were applicable prior to such date or in a manner prescribed by the Board."

The reason for this modification is to simplify the verification of member service for substitute and part-time teachers. The records of service maintained by the employing agencies, school districts and the System do not always contain the data required to compute service under the law effective prior to July 1, 1956. In those instances where records are inadequate the Board must be able to determine and permit the use of alternate methods for computing service. The method adopted by the Board would have to continue to

meet the requirements of Section 14052 which states that:

"Any member who rendered service prior to July 1, 1956, shall receive retirement benefits for that service at least equal to the benefits which we would have received for that service under the provisions of this chapter as they existed on June 30, 1956."

# INVESTMENT POWERS OF THE TEACHERS' RETIREMENT BOARD

Based on our recommendations outlined in Chapter XIV - Investments and Investment Administration under the subject heading "Purchase of Annuities" we recommend that the law be amended to:

- 1. Broaden the investment powers of the Board to include the power to enter into any one or more of the various types of group annuity contracts offered by life insurance companies licensed to do business in California.
- 2. Permit the Board to invest in such contract or contracts all or any part of the System's assets.

# APPROVAL OF INVESTMENT TRANSACTIONS

The System is currently not making the best use of cash resources for short-term investments. We estimate that at current investment rates an additional \$100,000 per year of interest income could be realized through improved cash forecasting and cash management techniques. These procedures will be detailed in a subsequent chapter of our report entitled "Investments and Investment Administration."

We recommend that an immediate change to the Government Code be made to add the System to those agencies exempted from the necessity to obtain approval of the Director of Finance for every investment transaction under Section 11012 of the Government Code.

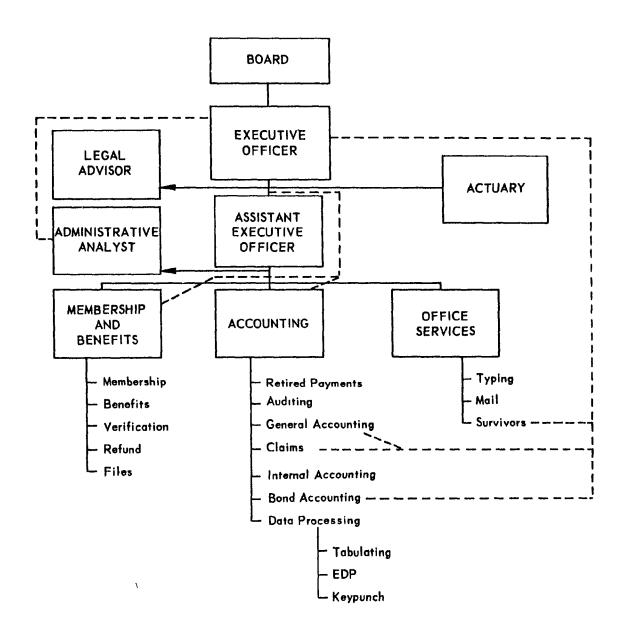
The reasons why the Director of Finance should not approve each security transaction for the System are:

1. A short-term investment must be quickly executed to take maximum income advantage of large amounts of cash as they become available.

The necessity to process a confirmation through the Department of Finance at times causes a delay in settlement.

- 2. Investment decisions are made under the direction of the same competent investment officers who carry out similar, and sometimes identical, investment transactions for the State Employees Retirement System, who are exempt from the approval requirements.
- 3. The investment transactions are carried out within guide lines set forth by the Teachers' Retirement Board, are individually approved in advance by the Executive Officer, and approved by the Board at its next meeting.
- 4. As the investment process for the System and the State Employees Retirement System are carried out at a distance from the Department of Finance, the latter is not in a position to evaluate the action being taken. The resulting approval is basically a formality which must rely on the judgement of the investment officers.

# STATE TEACHERS' RETIREMENT SYSTEM PRESENT ORGANIZATION STRUCTURE



\_\_\_\_\_ Denotes other lines of authority routinely exercised.

Note: All Section Heads confer with Executive Officer on technical and administrative matters.

#### VII - ORGANIZATION OF S. T. R. S.

The present S. T. R. S. organization, as shown on the facing page, consists of three divisions and an Administrative Analyst reporting to the Assistant Executive Officer who in turn reports to the Executive Officer. The staff positions of legal advisor and actuary report directly to the Executive Officer.

### BACKGROUND

The present organizational structure has evolved over a period of time to meet the changing requirements of S. T. R. S. The various new positions such as the Assistant Executive Officer, Administrative Analyst, Division and Assistant Division Chiefs were created but not integrated into a total cohesive operating group. This has resulted in pockets of specialization and lack of inter-department and inter-divisional communication. Over the years this has resulted in participation by the Executive Officer in the routine work of S. T. R. S. (as depicted by dotted lines on the organization chart); making decisions which would normally be expected of a subordinate and therefore reducing the effectiveness of middle management.

During this period of evolution the System has been faced with the difficulties of administering a complex set of laws with inadequate records, staff and equipment. It is not possible for us to state all the actions taken or not taken by management to contain and correct the operational problems. However, there are indications from reports issued by the Organization and Cost Control Division of the Department of Finance and the Auditor General that many of today's problems facing S. T. R. S. were pointed out to them as far back as 1958.

We believe that management should have directed greater attention in the past to the operational rather that the technical problems of the System.

The magnitude and complexity of the records and procedures should then have been more apparent. Management could have delegated routine and technical work to subordinates and devoted the available time to resolve the administrative problems.

### (a) Program Planning

It is evident that the System has lacked planning capabilities. Evidence of this can be shown by:

- 1. <u>Verification of records</u>. The original requirement was seen by management but it was unable to initiate clerical programs to attain their original objectives (discussed in detail in the Benefits and Verification Operations Chapter).
- 2. Proposed conversion to monthly reporting by counties by July, 1967. This program lacked sufficient research at the county level and development of clerical and computer systems at S. T. R. S. A conversion in July, 1967 would have been premature and caused additional operational problems for all concerned.

The more formal use of planning should become a technique used by all levels of management from the Board down to section heads. Objectives should be specified in measurable terms and the actual results should be evaluated to determine those responsible for deviating from the stated objectives. This method of reporting should cover all phases of the System's work so that deadlines for daily routine work can be achieved and sound planning and control be initiated for new plans. Management reporting is a vital part of an efficient and integrated management team.

### (b) Supervision

Those members of management empowered with line operating responsibilities should become more involved in the activities of the sections reporting to them. We observed that section heads individually have had no direction regarding work pace, procedures and individual training, with widely varying results from section to section.

Management makes little effort to provide staffing in areas where critical backlogs occur. At one period of this past year 1,800 files were awaiting final verification in the Audit Section. During a recent period there was an estimated 12,000 files checked out of the central files. This amounts to over 100 files per System employee, which is an indication of the poor work flow and document control.

Management must become thoroughly familiar with all procedures under their areas of responsibility. They should review and approve all procedural changes and require that adequate documentation and coordination between sections be provided. Standards for performance should be set and compliance with these standards attained.

### MANAGEMENT

It is therefore our considered opinion that a new approach is required to overcome the operational difficulties which exist within the System. We believe that management should direct their attention to the operational as well as the technical aspects of the System.

It is essential that the two key positions in management, namely the Executive Officer and the Assistant Executive Officer, have strong administrative capabilities and devote their time to the day to day problems facing their operating management.

The reporting relationship, responsibilities and qualifications for these positions are outlined in position description shown in Exhibits C and D.

### (a) Executive Officer

The present Executive Officer is extremely competent in the technical matters of the System as they relate to the execution of the existing and prior laws. Section heads have to rely on top management to provide day to day technical

guidance because when policy decisions were made they were not formally documented. As a result of this situation, together with the Executive Officer's technical background, delegation of responsibilities to division managers and section heads has not been achieved. The position of Assistant Executive Officer, as recommended in a report by the General Services Administration, was established to lighten the duties of the Executive Officer. The Assistant Executive Officer devotes a great deal of his time explaining retirement information to the teachers through conferences and interviews and therefore has not relieved the pressures of work on the Executive Officer.

We advocate that the Executive Officer should not be involved in the routine flow of work and that this work be delegated to the appropriate sections. His prime responsibility must be the overall administration of the System to ensure it is effectively and efficiently operated. In addition, he has to assume the responsibility for:

- 1. The developing and training of management so that they can assume the full responsibility of their positions.
  - 2. The planning and controlling of all financial assets of the System.
- 3. Continuing review of the System's operation to ensure that the best methods are utilized.
- 4. Representing the operation and needs of the System to the Legislature, State Administration and public and teachers' organizations.

The key to a successful operation of S. T. R. S. rests with this Executive who is held responsible for planning and controlling the overall System.

### (b) Assistant Executive Officer

The main responsibilties of the Assistant Executive Officer should be to execute the policy and administrative decisions of the Executive Officer.

This position requires a person who can interpret the decisions of management

and convert them into directives to the Divisional Managers and their staff.

The Assistant Executive Officer should establish defined lines of communication from clerical staff through section heads to division management. He should ensure that routine questions are referred to division management and only directed to him when a decision is to be made. He should only direct the problem to the Executive Officer if no prior ruling has been made. In addition to his normal responsibilities for the routine operation of the System, the Assistant Executive Officer should assume the full responsibility of the installation program of the agreed recommendations outlined in this report. This management position will have responsibility for:

- 1. System operation.
- 2. Installation of the recommended program.
- 3. Documentation and training.
- 4. Administrative policies.
- 5. Special studies.
- 6. Reporting.

This executive must effectively control the activities of each division if the clerical and computer operations are going to achieve the objectives outlined in this report.

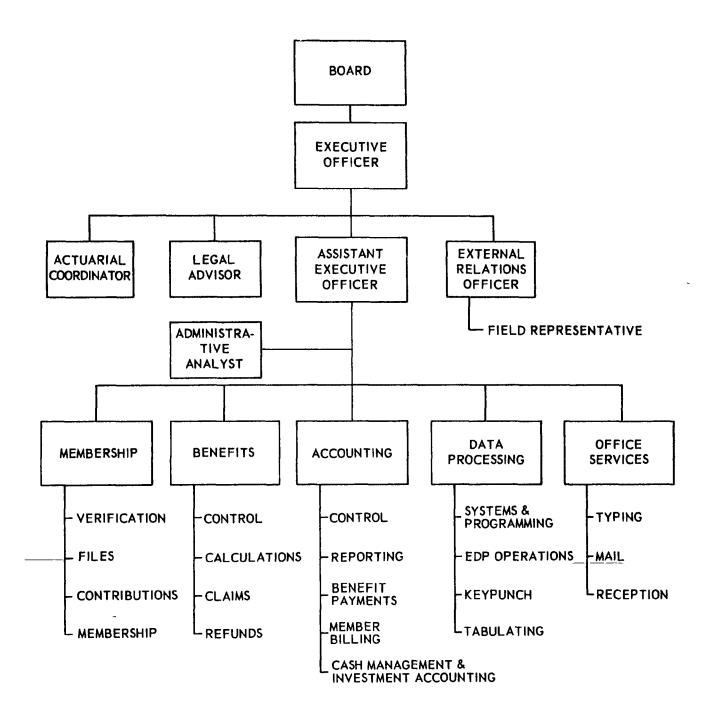
### ORGANIZATION STRUCTURE

The influence of technical knowledge on organization structure has resulted in processing bottlenecks. Individuals through necessity have specialized in certain phases of processing. This results in work crossing section or division lines in midprocess. No single manager under this arrangement has the responsibility to see that specific procedures are carried out quickly and efficiently.

### (a) Objectives for Organizational Change

In our opinion, more important objectives should influence the

# STATE TEACHERS' RETIREMENT SYSTEM PROPOSED ORGANIZATION STRUCTURE



organization structure. In making our recommendations we are giving consideration to:

- 1. Clear Responsibility Each division manager must have full authority over and responsibility for an entire program, to the greatest extent possible.
- 2. <u>Internal Control</u> Transactions affecting member accounts or the **S**ystem's assets should emanate in an orderly fashion and the results checked by an independent section.
- 3. Work Flow Similar processes and transactions should be placed together and be routed in similar patterns.

Within this report we will be recommending only changes that will clearly improve these objectives without unnecessary disruption.

### (b) Revised Organization Structure

A suggested revision to the present organization structure is shown on the facing page. Under this proposal the existing three divisions will be expanded to five so that the duties and responsibilities of the division managers can be clearly defined. These division managers and the Administrative Analyst will report directly to the Assistant Executive Officer who will be solely responsible for their operation.

The position of External Relations Officer and his field responsibilities are new positions, reporting to the Executive Officer.

An Actuarial Coordinator should replace the present vacancy of actuary in the System. His duties and responsibilities are discussed in Chapter XIII, entitled Actuarial Operations.

The following paragraphs will outline our reasons for establishing five divisions and the External Relations Officer program.

#### (c) Membership Division

The Membership Division presently has responsibility for maintaining member records, processing refunds, recording service, computing retirements and

investigating identification and rate errors on annual reports submitted by the counties.

In our opinion, the scope of responsibilities within this division is too broad and the number of significant programs too vast to permit effective control under a single division. In addition, the present organization divides the responsibility for maintaining records of service and records of contributions between two divisions. The problems involved in this separation of responsibility can be readily recognized by examining the differing degrees of progress made by this division in recording service and the Accounting Division in determining contributions relative to the verification procedure.

Our recommendations for revising the Membership Division are presented below:

- 1. The division would retain total responsibility for maintaining records of service, and assume a new responsibility for maintaining the contributions records of the Retirement System. The functions related to this latter area are presently performed by the Accounting Division and include:
  - Editing contribution reports
  - Verifying contributions and arrears processing
  - Preparing statements of service
  - Preparing adjustments to member records
  - Initiating arrears and redeposit entries
- 2. The verification functions for both active and retired members would be combined as a single section of this division. This section would assume total responsibility for service and contributions verification activity.
- 3. As indicated in the following paragraph, the Benefits Section would become a separate division of the System.
- 4. The Refund Section would become a section within the proposed Benefits Division.
- 5. Control over post-retirement teaching will be transferred from office services to this division.

### (d) Benefits Division

The present Benefits Section has the responsibility for calculating

benefits for service and disability retirements, verifying service for retiring members and maintaining the estimated retirement roll. In our opinion, the two latter functions are inconsistent with the overall objectives and programs of this section and we have proposed that these activities be transferred to other divisions.

The skills required to process and calculate retirement allowances are significant. We recommend that this section become a division and assume the responsibility for determining the amounts of all payments (other than account adjustments).

Specifically, the Benefits Division would be responsible for:

- ${\it l.}$  Computing service and disability retirements as under the present organization.
- 2. Processing and calculating refunds, presently performed by the Membership Division.
- 3. Processing death claims and computing survivorship benefits, presently performed by the Executive Officer and office services.

Under the revised organization, the process related to the estimated retirement roll would be transferred to the Retired Payments Section. Verifications functions, as indicated in the previous section, would be combined and under the responsibility of the Membership Division.

### (e) Accounting Division

Exclusive of data processing, the Accounting Division consists of the following sections:

- 1. <u>Internal Accounting</u> Cashiering, receivables, redeposits and general accounting.
- 2. Auditing Annual report editing, verification arrears billing, controls and statements of member accounts.
- 3. Retired Payments Maintenance and control of service and disability retirement rolls.
  - 4. Claims Processing all death claims.

## 5. Bond Accounting - Investment transactions.

Shortcomings of the present structure are that:

- No central single point of accounting control now exists
- Internal control is weak where control and entry initiation are in the same area
- Responsibility is now shared with membership for entries to member accounts
- Reporting, both internally and externally, not sufficient for accounting needs

This requires that the emphasis of this division be altered. We foresee four programs within the division, as follows:

- l. <u>Control</u> <u>Maintaining control over <u>all</u> transactions involving dollar amounts or creditable service amounts for accuracy and timeliness of entry. No transactions involving member records would be initiated.</u>
- 2. <u>Reporting</u> Preparing all System reports including financial statements, budgets, and operating reports. Maintaining necessary supporting records.
- 3. <u>Member Receivables</u> Once amounts have been determined, the carrying out of routine billing and benefit roll maintenance.
- 4. <u>Cash Management and Investment Accounting</u> In conjunction with the Investment Officer and most effective use of available cash and the processing of investment transactions.

These programs are explained in detail in the chapters entitled Accounting Division (XII) and Investments and Investment Administration (XIV).

### (f) Data Processing Division

The present Data Processing Section reports to the Accounting Division Chief. Under the present organization this reporting relationship is satisfactory since most of the work performed is related to accounting functions.

Under the revised organization and in consideration of the expanded data processing procedures proposed in this report, Chapter IX, this division should be considered as a service organization. It would provide expanded data processing services to all divisions. In our opinion, it should be administered

by a level of management (a division chief) that can most effectively establish schedules for conversion and the respective priorities for implementation of new systems for the total organization.

### (g) Office Services Division

This section is currently responsible for the following activities:

- 1. Survivors' and one-half allowances procedures.
- 2. Employment subsequent to retirement.
- 3. Mail (incoming and outgoing).
- 4. Stock room.
- 5. Central typing.

We recommend that items (1) and (2) be transferred to the respective Membership and Benefits Divisions and that this section be restricted to handle all recognized services required to run the office.

Our review indicated that improved techniques could be introduced to speed up the handling of mail and the control over procedures for ordering, receiving and authorizing payments of office stocks.

### EXTERNAL RELATIONS

In our meetings with counties and other outside representatives, we found a definite need exists to expand liaison activities.

### (a) Teacher Retirements

Many teachers encounter problems in applying for retirement. They seek advice from county personnel on the desirability of the various options and on how to proceed with retirement processing. County personnel feel they are not equipped to provide the teachers with sound advice in this area considering the complexity of the law and the contingencies involved in each individual case. Clinics have been conducted in some localities involving the services of

teacher associations and System representatives. Time made available by System staff has not been enough to meet the demand for help. As a result, much of the teacher assistance has been left up to the associations and to county personnel.

#### (b) County System

The increasing use of data processing by counties and the plans for monthly reporting will create a wide variety of problems for the counties and the System. The counties will be forced to make more extensive use of their own data processing facilities to produce the monthly report. Others will be forced to use prelistings of members supplied by S. T. R. S. Data submitted to the System must be in a compatible format with the System's equipment. As all counties are facing a reprogramming of systems revision in the face of monthly reporting, there is great potential for sharing and exchanging ideas. Coding and other specifics of data format must be clearly understood by everyone involved.

The System has in the past provided a reference manual for the counties containing explanations of the law and of pertinent forms required. In our visits to the counties, we found this manual, while helpful, was not referred to frequently nor was it inclusive in all areas. Los Angeles county found it necessary to compile and publish a manual for their own use for the districts within their county. At all counties we visited those involved spoke highly of the helpfulness of the System management and staff in answering questions or in providing assistance.

### (c) External Relations Program

The demands for assistance from the System have grown to the level where a formal external relations program should be started. We urge that this program be the full time responsibility of one employee, namely the External

Relations Officer, who would report to the Executive Officer. This employee and his field representative should be experienced and knowledgeable in the law and its benefits and the operations of the System.

Furthermore, we recommend his program include the following tasks:

- 1. Teacher Information Brochures and other forms need continuous updating and wider distribution. Consideration should be given to the preparation of a short movie of the System. This is a means of readily providing all the teachers with the same information, in a manner which can easily be reviewed in their own schools, and without the expensive time of staff and travel.
- 2. Field Representative Based on the anticipated rate of teacher retirement, the demand for interviews and clinics will require the increased time of System staff. We feel a full time representative is justified in the southern part of California, who would report to the External Relations Officer. The External Relations Officer would be expected to spend at least half his time in the same duties in northern counties. Field offices could be minimal, an office and an answering service or shared with other State agencies, as the field representative would spend most of his time in the districts and counties.
- 3. <u>County Systems</u> Data processing systems personnel should be made available to consult with reporting agencies on programming and systems planning. This may require the full time of one man in the next two years while counties and districts are converting to monthly reporting.
- 4. County Manual The existing manual should be rewritten and expanded to include the many changes that will be taking place in the reporting system areas. The problems causing the counties the most trouble should be identified and explained in detail. It must be emphasized that careful ground work will greatly reduce the System's editing and data correction activities.

### PERSONNEL TRAINING

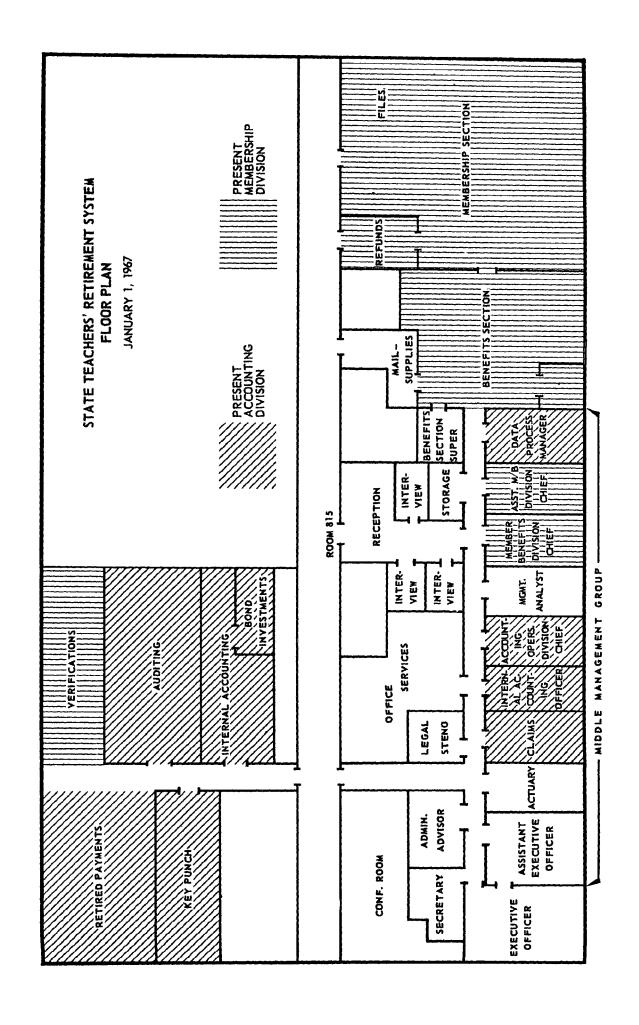
The System needs staff with a high level of technical competence to operate effectively. Many procedures require that an in depth knowledge of current and past sections of the law, as well as all administrative interpretations to the law. Experience is necessary to understand the contents of even a routine file and to process a verification, retirement or accounting entry. With the excessive turnover of personnel in the System, the burden has been heavy to train personnel and at the same time continue processing.

Unfortunately, the section heads have had little assistance in developing a training program and in achieving depth of experience. The System has only begun to put together any procedures documentation. Manuals consist only of notes and assembled memos that each individual has gathered in their individual area of activity. Training is entirely on the job with questions being answered as they arise. Under such an arrangement, it has not been possible to train staff members in more than narrowly specialized duties. Flexibility is virtually impossible.

This circle must be broken by an investment in more formal training programs. As we have recommended in Chapter II, the necessary first step is to sort from the mass of historical material, that which is law and that which should be documented as administrative rules and policies. From that point on, a training plan should include:

- 1. <u>Procedures Manuals</u> In each section, detailed position description, procedural flow charts, schedules, rules and forms should be assembled as reference and training aids.
- 2. Scheduled Training In each section, staff should become familiar with all jobs through scheduled meetings and discussions.
- 3. Cross Training and Rotation Each staff member should learn at least two jobs. This will increase flexibility, job interest, and improve internal control, if employees assume other duties as a matter of policy.
- 4. System-wide Training Scheduled training meetings should be conducted to familiarize staff with areas which they would otherwise not be exposed.

Such a training program would be intended to supplement on the job training. The investment of staff time in initiating the training program will be returned quickly in time saved. One member of management should be assigned the supplementary duty of training coordinator. He will assign other members of management the conduct of meetings and the documentation of their respective areas. The coordinator will make meeting arrangements and agendas and will finalize the procedures manuals into a uniform format.



### OFFICE LAYOUT

The present arrangements of offices is such that all management above the level of section head are grouped together in one corridor. Interchange between sections and their respective management tends to become limited.

Management cannot observe the operations under their control and only infrequently visit the sections. The facing page illustrates the grouping of management and the separation from their sections.

The sections each occupy closed rooms, which tends further to make each section independent in its staffing and work habits. There are few partitions that are truly required because of machine noise or for other reasons.

We suggest that Divisional Management and their assistants be placed in offices with full view of their respective operations. Further, all partitions within a division be removed, except where keypunch machines and other equipment require soundproofing. This has an additional advantage of increased flexibility of space utilization and of providing more natural light to interior working areas.

### THE RETIREMENT BOARD

In Article 2 of the Retirement Law the composition and duties of the Board are fully described. The powers of the Board are far-reaching and the decisions made are based on data provided by the Executive Officer.

### (a) Effectiveness of the Board

It would appear from the minutes of the quarterly meetings of the Retirement Board that they are extremely interested in all matters which directly affect the members of the System but in general have not been too aggressive concerning the administration of the System.

We believe that the Board could contribute significantly to the entire operation of the System if:

- 1. The nine members of the Board, as described in Section 13851 of the Law, attended all the meetings convened. During the period November 19, 1963 to January 6, 1967, the Controller and Director of Finance did not attend any meetings and only sent substitutes on a limited number of occasions.
- 2. The agendas were directed more towards policy and administration problems than to detail member cases.
- 3. A management report was prepared by the Executive Officer outlining the status of work, action taken to rectify and improve the operation of the System.

### (b) Board Meetings

As the meetings of the Board shall be open and public (Section 13866 of the Law) we feel that they should be more widely publicized so that the reporting agencies, school districts and members could attend.

### (c) Installation Responsibility

The Board will play a very important role during the installation of the proposed recommendations. A monthly report should be prepared by the Executive Officer stating clearly the progress of the installation program and the problems encountered. The Board should take action where necessary to ensure that the objectives of the program are maintained.

#### SUMMARY

The key to a successful S. T. R. S. operation is geared to organization. The ability to achieve a current status on daily routine work, update prior year records and to achieve a successful installation program rests squarely on management's shoulders.

Under the direction of a strong, able and experienced Executive Officer, the future of the System can be planned in the following ways:

- 1. The strengthening of management talent to implement a program of this magnitude.
- 2. The improvement of division managements' responsibilities, planning effectiveness and supervision skills.

- 3. The realignment of divisions to provide a clear definition of functions, responsibilities and duties.
  - 4. The initiation of an external relations program.
  - 5. More extensive personnel training.
  - 6. Improvement in work flow by internal control and office layout.
  - 7. Closer contact between management and staff.
  - 8. Increased attention of the Board towards administrative matters.

### VIII - REPORTING OF CONTRIBUTIONS

The reporting and recording of member service and contributions constitutes the largest single operating effort for S. T. R. S. and the reporting counties. Each of the 68 reporting agencies must prepare an annual report, due within six months after the end of the school year. Last year there was a combined total of over 280,000 line entries to be edited and posted to members' accounts. The timing of this procedure is such that for the fiscal year of 1964-65, twenty months elapsed before the transactions were completey posted. Such an extensive delay has significant bearing on the other processes of the System.

# PROBLEMS WITH THE PRESENT REPORTING PROCEDURES

The method of reporting has not changed since 1956, while membership and reporting volumes have increased over twofold. Many refinements have been made to the existing procedures, but the volumes under these procedures are becoming increasingly difficult to handle, both by the counties and by the System.

#### (a) Problems of the Counties

Approximately 80% of the annual report line entries are processed on data processing equipment in the counties. Our visits to the counties revealed, however, that what appeared to be data processing reports were merely print-outs of an extensive amount of manual work. The most important cause of this difficulty is that the information required by the System is not readily available as a by-product of normal payroll procedures. Furthermore, the annual report contents cannot be readily programmed for computer preparation. Substitute, part-time teachers, adult education teachers, and changes in pay rate are but a few of the many exceptional situations which require special manual treatment.

It is not easy for the counties to reconcile the annual report with the teachers' payrolls for the year because of nonmembers, exclusion of overtime, etc. Some counties are meticulous in their accuracy, while others sacrifice accuracy to prepare the report in a reasonably short time.

Although S. T. R. S. holds the counties responsible for the data submitted, it must be remembered that the data emanates from the school districts. The quality of data and the latitude of individual districts in payroll plans and in pay actions affect the counties' reports.

S. T. R. S. allows the counties six months to submit the annual report, and most take full advantage of this time. Some are delinquent in reporting, and there are no penalties exercised although available by law. In our conferences with the counties, we found it would be difficult to shorten this time allowance. Most of the work involving teacher personnel falls in the summer and early fall months when teachers are leaving and entering the employ of the districts. To additionally place the burden of the time consuming annual report on to them at this time would require the counties to increase their staffing.

### (b) Report Quality

The format of the annual report requires that many explanatory codes be used and that all data conform to a certain pattern for a given employment situation. The error rate of reports submitted is high. Of 280,000 line entries in the fiscal year 1965-66, 20,000 discrepancies of member identification (name, number, or rate) and an additional estimate of 20,000 discrepancies in amounts arose. Because of the change to Social Security number, the current reports' rate of discrepancies is higher. These errors are time consuming to analyze and correct, presently taking up to eight months to resolve by hand. Error detection methods have in the past not been as reliable, so there is no way of determining the number of undetected errors in the past which have already been posted to members' accounts.

Manual editing requires numerous letters to be sent to the counties for explanation or correction. The System has been lenient to the point where some counties take an extremely long time to answer or do not reply at all. One major county refuses to respond to the System's inquiries, but sends in error corrections as they are encountered in their own post-editing procedures.

As the annual reports are based on salary and service data that may not reconcile with the payroll data, the System has no reliable method of assuming that all salary and service has been reported. The school districts throughout the State have a wide variety of payroll plans, each of which has an impact on the data reported to the System.

### (c) Processing Capacity

The limited capabilities of the S. T. R. S. Tabulating Section compounds the delays. Machine editing of the current year's input is set back while past years' posting is completed. As it is impossible to staff for the peak loads when all reports arrive, clerical editing and error correction procedures must be spread over a longer period of twelve to eighteen months.

### (d) Scheduling

Management is not kept apprised of the flow of reports in order to take corrective action in preventing a backlog of work. The scheduling between sections only is that which can be negotiated between section heads.

# (e) Effect of Delays

The delays caused by the annual cycle result in a serious duplication of information requests to process current transactions. For example:

- 1. Refunds For each of nearly 10,000 refunds annually, requests of current contributions must be sent to the counties and entered when returned.
- 2. <u>Deaths and Retirements</u> The same procedure as (1) is followed for approximately 3,000 requests for current service.

- 3. Redeposit Eligibility Information about past members who have re-entered teaching must be obtained to determine the point in time when they are eligible to redeposit.
- 4. <u>Statements of Account</u> Unposted service and contributions must be researched for the most recent entries.
- 5. <u>Discrepancies</u> Interim information obtained in steps (1) through (3) may be at variance with that eventually reported by counties. These must be researched and resolved.

In any of the above situations, the System personnel have no assurance that all the information in process by the System has been obtained. There are many instances where teachers may work in several districts or counties in the interim or where adjustments to their accounts are in process in the System and unallocated. This results in frequent occurrences of over or under payments, which must be corrected at a later date.

### ALTERNATIVES FOR IMPROVEMENT

In exploring the means for overcoming the existing problems in the process of reporting contributions, consideration was given to both the timing and content of the reports of service and contributions. Also the roles that the counties and the Retirement System have taken in assuming the responsibility for the accuracy and completeness of the data must be examined.

### (a) System Responsibility

It is most important that S. T. R. S. assume the full responsibility for collecting and maintaining the official record of teacher service for retirement. Because of the lack of control and the variable quality of data now submitted, the System is not now in a position to assure itself that it has complete information. This, therefore, is a reversal of roles. The counties no longer should be the interpreters of what data and in what format the data should be submitted. The System's record of service should be considered the final record unless challenged and proven otherwise by the member.

### (b) Report Content

To assume the role of full responsibility, S. T. R. S. must obtain full disclosure from the counties. All service and all salaries paid whether the teachers are members or not must be reported. It should be the System's responsibility to determine when a nonmember is eligible for membership, a retired substitute has exceeded the limitations, or when a member is eligible for redeposit. Furthermore, the System should proceed to reconcile the reported salaries with the districts' salaries as reported to the State Controller, so the System is assured that all data has been received.

Less data is needed when more frequent reporting is employed. In examining report formats, we carefully evaluated each item of data requested under present reporting and under the monthly format as proposed by S. T. R. S., which closely follows that of S. E. R. S. Our recommendation regarding a revised formula for part-time and substitute service will greatly reduce the number of required codings. However, we did not feel that substantial reduction in the types of data required could be effected, so that any deviation from the S. E. R. S. format under a monthly approach would not be justified.

### (c) Report Timing

Three basic alternatives were considered to the interval of reporting:

- 1. Annual Cycle As presently performed with improvements to deadlines, machine editing, complete reporting and format.
- 2. Quarterly Cycle To coincide with quarterly reports required by the Internal Revenue Service so that salary data is available in a summarized and balanced form.
- 3. Monthly or Payroll Cycle To coincide with actual disbursements to teachers and avoiding all summarization by the counties.

To allow the System to assume full responsibility for service and contributions data, interpretations by the counties must be minimized. We have concluded that alternative (3), monthly reporting is the best approach consistent

with this objective and the objective of limiting the amount of required data.

### MONTHLY REPORTING

Supporting arguments and problems of monthly reporting must be examined from several viewpoints.

### (a) County Support

The persons in the counties we visited who are responsible for reporting (with one exception) were unanimous in their desire for a monthly reporting system. Many of them also prepared, or worked closely with those who prepared, State Employees' Retirement System reports. They were able to compare directly the relative ease of preparing the S.E.R.S. report as compared to that of S.T.R.S. Specific reasons expressed in support of month reporting were:

- l. Ease of Reconciliation Current reports could be reconciled more quickly to the current payrolls. Once balanced, old data could be put away.
- 2. Ability to Computerize The depth of data processing involvement could be increased.
- 3. <u>Current Information</u> The present procedures require working with payroll information that is as much as 18 months old.
- 4. Fewer Exceptions and Explanations Changes in salary or in other conditions of employment could be dealt with as they arise.

The degree of actual clerical savings at the counties was difficult to predict. Many felt it would increase the workload. In our opinion, there would be long-term reductions of clerical effort at the counties by converting to monthly reporting and by completing the verifications program (See Chapter XV).

### (b) Service to Members

The most serious drawback to good member service under present methods is the delay in providing members with information, in making refunds, and in benefit payments. Monthly reporting will not eliminate all delays, but should significantly reduce them and eliminate the procedures to circumvent the delays.

Most significantly, statements of service should be available to members within months of the end of the school year, instead of nearly two years later.

### (c) Compatibility with S. E. R. S.

The report format should follow as closely as possible that of the State Employees' Retirement System. This will allow the counties to combine programming and systems for the preparation of both reports. Should serious consideration be given to combining the two state retirement systems at some time in the future, compatible reports will aid in bringing about such a merger.

We explored whether the amount of data required could be substantially reduced over that required by the S. E. R. S. report format. S. T. R. S.'s proposed monthly reporting anticipates using the S. E. R. S. format. We found, however, that it was not possible to reduce enough of the reported data to justify deviation from the S. E. R. S. format.

One notable exception would be the simplification of reporting for subtitute and part-time teaching service, as recommended in Chapter III entitled Proposed Plan.

### (d) Problems Created

Monthly reporting creates new problems while solving others. Of most importance is the increased volume of input. Approximately ten times the number of line entries will be processed by the System annually. The effect of this increased volume on the data processing requirements is discussed in Data Processing, Chapter IX.

Many problems have yet to be resolved in the interpretation and reporting of unusual situations. For example, advances on teachers' contracts, with holds of salary for summer months and other pay plans that do not relate pay with the school calendar will require careful treatment, particularly when coupled with a change in status of the teacher during the year.

A great deal of systems and programming must be accomplished at the county level. We do not feel either the System or the counties appreciate the size of the task or the time required to provide reliable and timely monthly reports. As discussed in the following chapter, we feel the plan should be extended in time and implemented in phases.

### (e) Overcoming New Problems

Within S. T. R. S., error detection and correction procedures must be improved. Data processing should be employed to avoid a multiplication of the clerical staff. Deadlines must be rigidly enforced. Close liaison with counties is mandatory to bring about uniform reporting methods and the most effective use of data processing at the county level.

### SUMMARY

The present reporting system is not effective in providing reliable timely information in a reasonably efficient manner. We have explored various alternatives and have concluded that a monthly reporting plan is the most practical approach. The improvements to be derived include:

- 1. Improved information reliability.
- 2. Ability to provide more current information to members and to other elements of the System.
  - 3. Ease of preparation by counties.
  - 4. Compatibility with S. E. R. S.

This change will impose the necessity for extensive and long-term system planning and implementation.

#### IX - DATA PROCESSING PROGRAM

The principal objective of our data processing review was to evaluate the Retirement System's plan for converting to electronic computer equipment.

In addition we were to:

- 1. Review the proposed equipment configuration in connection with our findings regarding present and projected needs.
- 2. Determine the feasibility for joint use of equipment and facilities with the State Employees' Retirement System.
- 3. Ascertain the activities of the Retirement System that should be wholly or in part converted to electronic data processing to produce increased effectiveness and efficiency in operations.
- 4. Determine the requirements and develop a plan for accumulation, retention, and maintenance of data necessary to the actuarial requirements of the System.

# STATUS OF THE PRESENT DATA PROCESSING SYSTEM

Punched card equipment was originally installed by the Retirement System in 1948. Subsequent to that date, there has been no substantial increase in data processing capability. The number of active members, since that date, however, has increased nearly five times.

Generally, we found that the present data processing capability cannot effectively meet the existing or projected requirements of the Retirement System. Our analysis of the present installation is presented below.

# (a) Present Data Processing Applications

The existing data processing applications are presented as Exhibit E.

This analysis shows the number of machine hours expended on each job during the

1965-66 fiscal year.

It should be emphasized that this data does not reflect all processing activity required of data processing personnel. Due to the lack of sufficient

machine capability, the major punched card master records are maintained and updated by hand.

### (b) Condition of Punched Card Master Records

Due to the eighteen month delay in posting member accounts and the infrequent need for actuarial reports, the punched card master records are not kept in current condition. Prior to converting these records to advanced computer systems, these files must be brought to a current and accurate condition.

Our review of these records indicates the following problems:

- 1. The active member statistical file contains many duplicate records due to the eighteen month delay in the annual reporting cycle. At present, it is not possible to identify the most current record. We suggested that the present procedure be modified to include keypunching transaction date into each record change card. This recommendation has been adopted and should reduce the number of clerical investigations required prior to future systems conversions.
- 2. The many verifications of post-1956 records indicate that the active member statistical master file may contain numerous age, birthdate, effective date, and rate discrepancies. The number of errors of this type cannot be determined at this time. We strongly recommend taking immediate steps to make a computer edit of this file in order to determine the number of errors and to serve as a source for making manual file corrections.
- 3. The retired member statistical master file has not been updated since 1964. In addition, procedures for generating changes or corrections to this file have not been established. The need to perform more frequent actuarial studies requires that these records be kept current and that formalized procedures for updating this file be established.

Management is now taking steps to bring these 30,000 records up-to-date by performing a manual comparison of data recorded in the statistical record with the retired member file folder. It is expected this will be accomplished within one year.

### (c) Equipment Utilization

The annual utilization for each piece of equipment is shown as Exhibit

F. Data processing operates on a two shift basis. The peak period of utilization occurs in the first quarter of each year when data processing is editing the

annual membership contributions, posting member accounts, and preparing contribution statements. The level of utilization for most pieces of equipment during this period will increase by about 50% to 60% over the normal level for the period.

A critical factor related to operating efficiency is the shortage of space for this operation. Present conditions do not permit an efficient layout of accounting machine equipment and effective utilization is impaired by inadequate space.

### (d) Scheduling

The scheduling of data processing applications during peak periods of activity is critical. All major applications during these periods cannot be processed due to the limited capacities and speeds of the present equipment.

During the most recent period, refunds were not processed for a sixweek period due to the heavy workloads required for posting member accounts.

When several peaks of activity coincide, the System is incapable of meeting the
total processing requirements. This condition has violent impact on clerical
procedures and most important, an adverse effect on the quality of service to
members.

### (e) Quality of Input Data

The quality of contribution reports received annually from the counties is poor. About 80% of these transactions are received in punched card form. Although S. T. R. S. has supplied each county with the required punched card format, an estimated 40% of the data must be reworked into the prescribed format before it is acceptable for machine processing.

The poor quality of punched card data transmitted by counties must be substantially improved prior to conversion to monthly reporting procedures. To continue to receive improperly formatted data on a monthly schedule could result in a complete breakdown of the proposed monthly reporting system.

### (f) Controls

Most accounting data transmitted to data processing is under batch control. Documents relating to new membership and status changes are not adequately controlled.

Prior to implementing major revisions to the present data processing system, the control procedure outlined in Chapter X should be installed.

### (g) Present Costs

The present annual cost of equipment and personnel is approximately \$90,000 (Exhibit G). This figure does not include the annual salaries of management and programming personnel who are involved in the system's design for the planned computer system. These additional costs are approximately \$60,000 per year.

### S. T. R. S. PROPOSED DATA PROCESSING PROGRAM

The data processing mechanization program proposed by S. T. R. S. is designed to totally integrate the major functions of the agency. The principal objectives of this program are to:

- 1. Improve the level of service to members by accumulating and recording the data required to process retirements, refunds, and death benefits.
- 2. Provide timely accounting, actuarial, and control reports for management.
  - 3. Answer inquiries from members promptly, efficiently and accurately.

The feasibility study performed by S. T. R. S. management was completed in March, 1965 and based upon the approval by the Department of General Services, specifications were developed and made available to eight equipment manufacturers. These specifications were specifically geared to the requirement of mass storage and random processing.

In November, 1965, all manufacturers had responded and with the assistance of the Department of General Services, the proposals were analyzed and the operating specifications for the basic minimum equipment configuration were established.

In January, 1966, the data processing plan was presented to the Board by management. The Board approved the plan at that time, and based on the analysis presented at that meeting, the equipment manufactured by International Business Machines Corp. was selected.

The original installation schedule date was set for July, 1967, however, this program has been delayed pending the results of this study. The specific program as conceived and planned by S.T.R.S. management is presented in the following sections.

# (a) Planned Computer Applications

The principal data processing applications identified during the initial feasibility study and reported on by the selected manufacturer are essentially the same as the applications presently planned. These applications are outlined below:

- 1. Member Identity The plan calls for mechanizing the roster file (alphabetic index) to computer processing. This procedure is intended to eventually eliminate the manually maintained chain index file and to permit the identification of member account numbers by either punched card or direct inquiry into the computer system.
- 2. <u>Monthly Reporting</u> Member service and contributions would be received from the counties monthly rather than annually. The new system was designed to collect data as a by-product of the county payroll function.

The major objectives and benefits of more frequent reporting would be to determine and correct reporting discrepancies on a current basis, provide and permit the issuance of annual contribution statements to members on a current basis.

3. Retirements - The proposed system includes a procedure for retaining all of the pertinent data required to compute retirement benefits under each of the unmodified or various option possibilities. In addition,

requests for benefits quotations would be computed under each of these plans to assist the member in selecting the most appropriate retirement program.

Upon final selection of the retirement plan by the member, the data in computer storage would be automatically transferred to retirement status. At this point, the retired payment roll would be generated to permit prompt issuance of monthly warrants.

- 4. <u>Refunds and Death Benefits</u> The data required to automatically compute refunds and death benefits would be retained in storage. The system is designed to permit more current and rapid processing of these payments. Members re-entering the Retirement System would receive computer prepared monthly billings.
- 5. Actuarial Reports The plan is to accumulate actuarial data as a by-product of the computer procedures outlined above. Under these conditions, an actuarial analysis could be made annually and special studies could be processed on a request basis.
- 6. <u>Investments</u> This system was designed to provide the ability to analyze the investment portfolio on a real-time basis. The system would perform the calculation of yields, maintain interest due reports, and provide monthly investment analysis reports for management.

### (b) Equipment

The equipment selected to perform the applications and procedures described above is an IBM System/360, model 30. The system contains random mass storage capability which can be utilized to store and retrieve up to 800 million digits of information.

The equipment on order also includes four video display stations which provide the source for displaying data from computer storage at selected clerical work stations. Normal processes being performed on the system can be interrupted for these inquiries as they occur.

The computer configuration which is presently on order rents for approximately \$13,000 per month (Exhibit H).

### (c) Personnel Requirements

Data processing management has projected their personnel requirements for a four-year period. Once the system becomes fully operational and when the existing data processing staff has been phased out, the personnel requirements

projected by S.T.R.S. are presented as Exhibit I. The projected annual cost for the 1970-71 fiscal year will be approximately \$233,000.

The personnel requirements for the clerical area have not been projected by management.

### (d) Installation Schedule

The original conversion date was scheduled for July, 1967, however, the conversion has been rescheduled for July, 1968. After that date, all counties would submit service and contribution reports on a monthly basis. By December 31, 1968, the counties would submit their final annual report and the system would become operational on a monthly reporting schedule.

Although the plan is to receive all equipment in June, 1968, the Retirement System does not have a detailed conversion schedule for each major application.

### (e) Cost of the Program

The annual cost projections prepared by S.T.R.S., including equipment, personnel, and installation costs range from \$454,000 for the 1968-69 fiscal year to \$412,000 for the 1970-71 fiscal year. This projection of cost exceeds the present annual expenditure for data processing by about \$354,000 and \$312,000 respectively.

Similar cost projections for clerical activities had not been completed by management at the time of our study.

### EVALUATION OF THE PROPOSED PROGRAM

The data processing program proposed by S.T.R.S. is acceptable as a long-range system objective. In our opinion, however, this plan is too aggressive for successful short-range implementation and if undertaken on this basis by the Retirement System, the result would be a complete diversion of management effort

away from other vital projects. Due to the many programs recommended in this report, the effort expended on each must be balanced one with the other and be totally consistent with the capability of management to implement.

We concur that advanced electronic data processing equipment and capability are required by the Retirement System, however, we strongly recommend that a step-by-step transition of systems, methods, and procedures be planned. The basis for this recommendation is summarized below.

### (a) Condition of the Present System

The status of the present system has been presented earlier in this Chapter. It is emphasized here that the degree of success achieved through conversions to advanced data processing systems is directly dependent upon the quality of existing records, systems, clerical procedures, and supervision.

We do not believe that present conditions are conducive to the successful implementation of the planned system.

The Retirement System has made conversions to expanded data processing procedures in the past, however, the effort to record service in data processing format has not been successful. In our opinion, the Retirement System must not undertake a new conversion of major proportions without first establishing a sound and workable program for bringing their records up-to-date.

# (b) Data Processing Applications

Several key data processing applications proposed by S. T. R. S. in their original feasibility study cannot be achieved at this time. These are:

1. Automatic Computation of Quotations and Retirement Benefits - without records of member service prior to 1956, separate records of local and non-local service, and separate records of retirement annuity interest, computer processing of this application cannot be achieved as originally conceived. The system can only perform these calculations on data gathered manually for entry into the computer system as opposed to the original concept of having all significant data stored within the computer system.

2. Video Inquiry Capability - The video display concept does not provide significant benefit to the overall system, since such inquiries could be handled on a 24 hour basis by entering punched card input (as a source for inquiry) into the computer system. Inquiries of vital significance could be entered into the computer console for near immediate response. Much of the significant data needed by clerical personnel would not be available in the computer system on a current basis until counties are reporting contributions on a monthly basis.

In addition to these applications which cannot be immediately implemented, there are several additional procedures which should be delayed or processed in another manner. These are:

- 1. <u>Automated Roster File</u> This application is not an immediate requirement of the System. In Chapter X, we have proposed the addition of two chain index clerks to processing documents that require Social Security number identification. In addition, we have proposed new procedures which will encourage the use of Social Security number when outside sources contact the Retirement System. The conversion of this application should be defined as a long range program.
- 2. Actuarial Analysis This application should not be used as a basis for justifying a major computer installation. The existing punched card statistical records, when edited and corrected, could be transferred to magnetic tape and the required analytical reports could be prepared on a service bureau basis.
- 3. <u>Investment Reporting</u> We have proposed the joint use of S.E.R.S. systems, programs, and equipment for producing these reports. In our opinion, the use of video display for this application is not an essential requirement.

### (c) Schedule for Conversion

posed system in July, 1967. In our opinion, implementation of this vast program on the original schedule date would have been disastrous to the Retirement System. Sufficient progress in systems redesign and programming effort had not been made at the beginning of our study (January 3, 1967) to permit an orderly and controlled conversion on the planned conversion date.

In addition, the plan to correct both internal procedures and the systems at all counties simultaneously could not have been successfully accomplished. We are recommending a "phased" approach for accomplishing the conver-

sion to monthly reporting, extended over a three year period. During the first year, only a select and limited number of counties would be converted. This schedule would permit a thorough testing of clerical, programming and computer systems prior to making a total conversion to monthly reporting on a state-wide basis.

## (d) Data Processing Equipment Requirements

In our opinion, the equipment proposed by S. T. R. S. contains capacities in excess of their immediate requirements. A de-accelerated installation program for monthly reporting and the establishment of more realistic schedule dates for several of the proposed applications (as indicated previously) reduces the immediate equipment capability requirements.

### (e) Personnel Requirements

Under a de-accelerated installation schedule, the personnel requirements as originally proposed by S. T. R. S. could be reduced. The number of clerical personnel required by S. T. R. S. during the conversion to monthly reporting must be included in the projection. We estimate that 8 to 10 people will be required during the conversion period.

#### (f) Summary

In summary, the plan as originally conceived by management must be revised. Although it is accepted as a long range program, any proposed data processing program must be de-accelerated and brought into proper balance with all other programs of the Retirement System.

In the following sections of this Chapter, we are presenting our evaluation of a joint S. E. R. S./S. T. R. S. computer system and our recommended data processing program.

## ANALYSIS OF JOINT S. E. R. S./S. T. R. S. COMPUTER FACILITY

As our alternative to installing a separate data processing system at S. T. R. S., we evaluated the potential for operating under a joint computer operation with S. E. R. S. We found that the objective of both retirement systems for data processing to be the same, in the following aspects:

- 1. Both systems plan to implement the same data processing applications.
- 2. Both systems have the same service level objectives and plan to utilize random mass storage equipment in the future.
- 3. The System's design for capturing by-product payroll data at the counties for recording service and contributions is compatible with methods used by S. E. R. S.

Despite the apparent advantages of the joint operation, it is our opinion that such a program should not be considered for implementation at this time. The reasons for this recommendation are outlined below:

# (a) Lack of Immediate Compatibility

In our opinion, the key objection to a joint operation at this time is the incompatibility of the present systems. S. E. R. S. has been on monthly reporting for many years and has near-current data available in the system.

S. T. R. S., conversely, is operating on an annual reporting system and does not have current contribution data available.

To combine these two systems on such a basis at this time could well result in ineffective data processing operations for both retirement systems. We would not recommend such a joint venture until both systems are functioning under a monthly reporting plan. This cannot be accomplished by S. T. R. S. for an estimated four to five year period.

### (b) Systems Integration

In order to successfully operate as a joint system, the records of

both retirement systems should be integrated and merged. Contributions data from counties under this approach would also be integrated and the records of both retirement systems would be updated in a single operation.

In our opinion, any plans for joint operations should be delayed until this type of operation can be achieved.

### (c) Equipment Requirements and Costs

The Honeywell 200 computer system presently operated by S. E. R. S. is used for two full shifts each day throughout the year. At the close of the fiscal year, the equipment is operated for a third shift for a two month period. This peak period of utilization coincides with the peak period of activity at S. T. R. S.

In order to combine both systems, a revised and upgraded computer complex would be required. A recent study prepared by S. E. R. S. data processing personnel indicates that a two computer system, including a Honeywell 2200 and 120 systems, would be capable of meeting the processing requirements of both retirement systems.

The annual rental for this equipment would be approximately \$180,000 to \$200,000. An additional staff of seven computer operations personnel was projected at an annual cost of about \$60,000. Programming staff would continue to be required at S. T. R. S.

In our opinion, the potential for substantial reductions of data processing equipment costs could be achieved only when both systems are compatible and operating on an integrated basis.

#### (d) Summary

We recommend that plans for joint use of equipment by both retirement systems be delayed until S. T. R. S. is operating effectively on a

monthly reporting schedule. This program will require approximately five years to achieve.

The State Employees' Retirement System should obtain equipment necessary to operate independently and continue their research and possible transition to random processing equipment.

At the end of a five-year period, the potential for joint operation should again be re-evaluated.

# RECOMMENDED DATA PROCESSING PROGRAM

We recommend a more gradual conversion to advanced data processing systems than is presently being planned. This program has been integrated and scheduled (Chapter XVI) into a balanced master plan of projects for the Retirement System.

### (a) Growth Considerations and System Requirements

Based on historical growth patterns, we have projected the major activities of the Retirement System through 1975 (Exhibit J). In our projected schedule for implementation, the system will not be fully operational until the end of the 1970-71 fiscal year.

Our volume projections indicate that the total active and retired membership will exceed 450,000 members by 1971. In our opinion, the data processing capability at that time should have the capacity of processing volumes for at least a three to five-year period (1974-75). This is an important requirement in order to avoid costly equipment or systems conversions in the future.

Most clerical activities increase proportionately to either the active membership or retirement growth trends. As indicated by the projected

membership activity, the Retirement System could anticipate an estimated increase of more than 50 percent by 1975. The activities related to processing retirements, however, could be expected to increase by 100 percent for the same period.

# (b) Proposed Data Processing Applications

Management plans to operate both a machine accounting and computer system during the eighteen month period for phasing out the annual reporting function. Based on a "phased" program for converting to monthly reporting, we recommend that the present applications be converted to computer processing. Under this approach, the accounting machine equipment could be released at the time of installing the computer system.

The major applications for computer processing are outlined in the following sections.

- 1. <u>Contributions Accounting</u> This system would be designed to accept both monthly and annual schedules for reporting member contributions. We recommend that management select five to eight counties of various types and sizes for the first years of monthly reporting operation. Once the system has been refined, the remainder of the counties should be converted over the following two to three year period.
- 2. Statistical Records The active and retired member statistical records would be converted and maintained on the computer system. The active master records would be maintained in Social Security number sequence. In addition, the records for those members teaching in more than one county would be consolidated. The need to update county codes, as required by the present system, would be eliminated.
- 3. Retirement Roll The procedure for initiating monthly payments to more than 30,000 retired teachers would be mechanized. The method for transmitting data to the Controller's Office would be converted to a magnetic tape procedure, which conforms to the methods now used by S. E. R. S.
- 4. <u>Inquiries and Rate Requests</u> Contributions or statistical data would be available for inquiry on a daily basis. We recommend utilizing a punched card inquiry approach as opposed to a video display. Rate requests from counties would be listed each day and forwarded to the appropriate agency. This latter procedure may be eliminated when the single contribution rate becomes effective.

- 5. Benefit and Quotation Calculations A modified benefit calculation procedure is presently being designed by management. The present procedure requires a complete entry of all data into the system and only the calculations are performed. As the basic computer data file is established, this procedure will become more simplified since many portions of the data will be stored in the computer system. After records of service prior to 1956 have been established, the system will become even more effective for computing either benefit or quotation calculations.
- 6. Refund Roll the availability of more current contributions data will permit improved service for issuing refunds. Under the monthly reporting system, however, there may be a two to three month lag in posting. The system should be designed to provide refund checks up to 80 percent of the total contribution, followed by an additional payment for the balance when all contributions have been reported.
- 7. <u>Member Receivables</u> The monthly billing routine and payment records for members paying redeposits on an installment basis will be processed by computer procedures. Many of the present clerical procedures related to this activity will be eliminated.

After monthly reporting has become totally operational, the roster file and advanced inquiry techniques should be explored.

### (c) Computer Equipment Requirements

The computer equipment selected for use by the Retirement System must be capable of processing transaction volumes at 1971 levels. It is at this date when monthly reporting (the major application in terms of volume) becomes fully operational for most counties. In our opinion, the basic computer system should also be capable of meeting the System's requirements for an additional three to five-year period beyond 1971. In summary, the equipment selected today should be capable, through modular expansion, of processing volumes at the projected 1975 levels. The objective is to avoid major and costly systems, equipment, or programming conversions in the immediate future.

We considered several basic alternatives for meeting the system's requirements of the Retirement System. These alternatives were:

- 1. Expanded punched card system.
- 2. Small punched card computer system.

- 3. Magnetic tape oriented computer system.
- 4. Random mass storage computer system.

Our projections of volume through 1975 strongly indicate that an expanded punched card or small punched card computer could not adequately meet the future system's requirements. In our opinion, the major alternatives for consideration are the magnetic tape or random storage systems.

The annual rental cost of the magnetic tape approach is approximately \$24,000 less than for a random storage oriented computer system.

Despite this cost differential, we propose the random storage approach for the following reasons:

- 1. Daily processing of a small number of transactions compared to the total number of member records contained in the master file would be more efficiently performed under the mass storage approach. Projected transaction volumes indicate that only 10 to 15 percent of the total number of records would be updated each day.
- 2. The mass storage approach would permit the consolidation of statistical and contributions data for a given member into a single record. In our opinion, the magnetic tape approach would require maintenance of separate statistical and contributions records.
- 3. We estimate that the magnetic tape approach for the projected volumes would require a two shift computer operation. The random storage approach, however, could be operated on a single shift for at least three to four years after installation. The additional cost of personnel and equipment for a two shift operation would more than offset the \$24,000 annual equipment rental saving for magnetic tape equipment.
- 4. Future systems requirements, such as the conversion of the roster file and advanced inquiry techniques to computer processing would require equipment and systems conversion to mass storage concepts. Installation of mass storage capability at this time permits expansion to these applications in the future by expanding this configuration on a modular basis.

We recommend that the following modifications to the IBM 300-30 system presently planned by S. T. R. S. be modified as follows:

<u>Deletions</u>	Additions	Cost Reduction	
Tele-processing equipment		\$ 970	
Central Processor (65 K)	Central Processor (32 K)	1,200	
Printer & Control (1403)	Printer 1443	500	
Total Reduction		\$2,670	

This reduction is consistent with the slowed down schedule for implementation, and reduces the monthly rental for computer equipment from \$13,045 to \$10,375. Based on the added volume and new applications projected for 1971-72 fiscal year, the system should be modularly expanded to include these features at that time.

In addition to the computer equipment, the system will incur a projected \$6,000 per year on keypunch, sorting, and collating equipment.

### (d) Personnel Requirements

Our projections of personnel requirements for data processing are presented as Exhibit K. The costs used in this schedule are at 1971 projected rates, which correspond to those salary rate projections prepared by S. T. R. S. (Exhibit I).

In our opinion, this staff should be capable of carrying out the program through 1971. This staff would be supported by a systems and procedures analyst on the management staff and by a control section located in the Accounting Division.

### DATA REQUIRED FOR PERFORMING ANNUAL ACTUARIAL VALUATIONS AND EXPERIENCE STUDIES

The data required for performing actuarial valuations which data will be, in large part, readily available from the records of the revised System is as follows:

### (a) Active and Inactive Members

- 1. Social Security number.
- 2. Month and year of birth.
- 3. Sex.
- 4. Entry date (month and year).
- 5. Member contribution rate.
- 6. Annual rate of compensation during the school year ending on the valuation date.
- 7. Employment code:
  - Full-time
  - Part-time
  - Substitute
- 8. Years of credited service between June 30, 1956 and prior valuation date.
- Credited service during the school year ending on the valuation date.
- 10. Permanent Fund contributions:
  - Made for service before July 1, 1935
  - Made for service between July 1, 1935 and June 30, 1944
  - Made for service between July 1, 1944 and June 30, 1956, with and without interest
  - Made for service after June 30, 1956, with and without interest
- 11. Retirement Annuity Fund contributions with interest.
- 12. Status on the valuation date:
  - Active (non-local)
  - Inactive (non-local)
  - Active (local)
  - Inactive (non-local)
- 13. Date when member became inactive.

14. Total adjusted earnings for part-time or substitute service.

### (b) Retired Members

- 1. Social Security number.
- 2. Type of payment:
  - Service retirement
  - Disability retirement
  - One-half continuance
- 3. Date of retirement or date of death if payment is with respect to the one-half continuance allowance.
- 4. Payee code:
  - Male member
  - Female member
  - Male beneficiary
  - Female beneficiary
- 5. Birth date of payee (month and year).
- 6. Option code.
- 7. Birth date of live beneficiary.
- 8. Social Security number of live beneficiary.
- 9. Monthly amount of:
  - Subvention
  - Pension
  - Annuity
- 10. Accumulated contributions at retirement.

The inclusion of a gain and loss analysis in the annual valuation requires the retention of some of the results of the prior valuation. The reason for this is that actual experience must be compared with expected experience in order to analyze, into its components, the amount

of actuarial gain or loss. Once the records of the System are brought up-to-date with respect to credited service prior to July 1, 1956, the amount of input data needed to perform the valuation will be materially reduced.

### SUMMARY

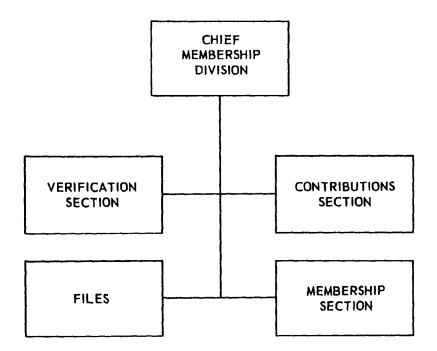
Once the proposed data processing system has been installed and operating effectively, several alternatives for the future should be examined. The first alternative is the potential for joint use of equipment and facilities with S. E. R. S. As indicated in this report, a totally integrated system for preparing, transmitting and processing teacher and state employee data should be considered.

The management of S. T. R. S. should also continue to observe the progress of the newly formed regional education data processing centers. This network of systems could, in the future, provide a source of teacher data to the data processing system at S. T. R. S. or could possibly form the basis for a joint computer system and operation.

The data processing program prepared for S. T. R. S. can provide a sound basis for future conversion and systems integration under either alternative.

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# PROPOSED ORGANIZATION MEMBERSHIP DIVISION



### X - MEMBERSHIP DIVISION

The principal functions of the Membership Division presently include:

- 1. Processing new membership applications, member status changes, and contribution rate requests submitted to S.T.R.S. by the counties.
- $\hbox{\bf 2. Maintaining member record files and alphabetic cross-reference systems.}$
- 3. Computing service for members, assigning contribution rates, calculating retirement benefits, and processing member refunds.
- 4. Investigating discrepancies relative to each of the above functions and as a result of annual reporting from counties.
  - 5. Verifying and recording member service prior to 1956.

As indicated in Chapter VII, we recommended several revisions to the organization of this division. The proposed organization chart is presented on the facing page.

Most clerical functions in this division are highly cyclical, with peak workloads occurring in the month of July through October. Fifty to sixty percent of the paperwork volume relating to new applications, rate requests, and status changes is received during this four-month period. Shifts in some clerical duties take place, however, heavy volumes of documents for processing are backlogged during this period.

Many of our recommendations for this division are directly related to the installation of data processing procedures outlined in this report. There are, however, major revisions relating to the filing and alphabetic index systems which should be implemented immediately.

#### MEMBER RECORDS

Significant improvements to the member record filing system have been made during the past two-year period. Several years ago, clerical and management personnel pulled their own files for processing. In addition, the filing system was divided into seven separate segments, each based upon the status of

the member.

below:

Recently, however, the following improvements have been made or are in the process of being implemented:

- 1. A separate file section has been established to service the needs of all departments.
- 2. The separate segments of the file system have been consolidated into a single numerical system.
- 3. The member numbering scheme is presently being converted to social security numbers.
- 4. A file locator system has been installed to assist in locating member records which are out of the central filing system.
- 5. A program has been established to purge old files out of the system.

  Several key problems of management policy relating to the handling

  of member records still remain to be resolved. These problems are discussed

### (a) Consolidated Filing System

In addition to the central filing system, there are numerous subsidiary member record filing systems throughout the office. These include those retained and maintained by Verifications, Refunds, Benefits, Auditing, Claims, Office Services, and by the Executive Officer. Recent statistics indicate that more than 12,000 files are retained outside the central system.

We recommend that steps be taken to consolidate and to maintain all records in the central filing system. Under this approach, records would be more readily available which will reduce the time-consuming clerical effort for locating files and service to members will be improved.

#### (b) Workload and File Control

In order to improve the overall level of service and clerical effectiveness, the number of files pulled for processing must be consistent with existing and scheduled workloads. With proper supervisory control, only those files that can be processed in a reasonable span of time should be pulled from central files for processing by the clerical units.

Under a controlled operation of this type, the following additional procedures should be implemented:

- l. An inventory showing the number of files in a department and section should be taken each month. Where significant volumes of files appear, a written explanation would be required, including the actions or decisions that are required in order to complete the processing.
- 2. A "File Locator List" should be prepared (typed and reproduced) twice each week. The member number for those files which cannot be located would be listed sequentially. A copy would be distributed to each work station and the appropriate files would be forwarded to the File Section for redistribution to the requesting party.

### (c) File Organization

The contents of any given member record are not fastened to the jacket and are not sequenced in a specific order. This condition can result in the loss of significant documents and complicate and lengthen the clerical time required to review a member record file.

We recognize that a program geared to arrange and fasten the contents of all member records would be a major project. Therefore, we recommend that the following program be established:

- l. Management should define the filing sequence and contents of documents in a file folder.
- 2. As records are returned to the file section after processing, clerical personnel should sort, purge, and fasten the documents to the file jacket.
  - 3. New member records should be set up in the same manner.

We estimate that this procedure will require the addition of two clerical positions to the section.

### (d) Roster File Operation

The roster file (alphabetic cross-index) is used to identify member numbers for those inquiries that are received without proper social security

number identification. In most instances, each clerk is indexing her own documents for proper identification.

Workload statistics gathered by management indicate that two man years are consumed in this activity. We recommend that initially, two clerical positions be established to process all unidentified documents against the file. Number identification would be completed prior to routing the data to the file section or to the appropriate department for further processing.

Every effort should also be made to require teachers and counties to use social security number when contacting the retirement system. There are several methods which should be utilized to achieve this objective. These are:

- 1. A firm policy should be established to return all documents received from counties without proper number identification.
- 2. A special inquiry form should be designed and made available at each county for use by teachers when contacting the System. Teachers should use the form to expedite the processing of inquiries, requests for refunds, quotations, and retirement forms.
- 3. The use of a revised and current annual statement form will tend to reduce the number of inquiries and can serve as a source of communication between members and the Retirement System.
- 4. Correspondence to teachers should include a mailing piece which indicates the necessity for using their social security number when contacting S.T.R.S.

# APPLICATION AND STATUS \_CHANGE PROCEDURES

The recommendations contained in this section should be implemented prior to the conversion to computer procedures. In addition, these proposals should be incorporated into the design of the mechanized system and accomplished at an early date to promote an orderly transition.

### (a) Forms Redesign

A new and revised membership application form has been redesigned by

S.T.R.S. This new form will eliminate clerical effort required to copy significant data into the keypunch code block and should reduce the major sources of error when processed at the counties.

We recommend that the rate request form (309) also be redesigned. At the present time, the only way to determine the type of change required is to compare the content of the form with the members' record. The form should provide a format which will enable the county to indicate the type of change. By incorporating this feature with a "change code" structure, clerical and data processing effort will be reduced. The selected code structure would also be designed for use by the future electronic data processing system.

### (b) Contribution Rate Requests

Rate requests are processed in the same manner as status changes. The present procedure results in unnecessary workloads for data processing and results in a substantial number of duplicate records in the statistical master file.

We recommend that rate requests bypass the status change procedure. The membership section should enter the appropriate rate, and return the form to the initiating county. This procedure will eliminate the need to process about 10,000 to 15,000 statistical cards annually by data processing.

### (c) Member Status Changes

Status changes are processed by data processing without proper processing data identification. This practice makes it impossible to determine the most current status of the account and results in confusion in the membership section when investigating annual contribution report discrepancies. This procedure will also complicate the conversion of the active member statistical file to electronic data processing equipment.

Continuation of this procedure will require clerical investigations of all duplicate records.

We recommended that processing date be incorporated into the present punched card format. We understand that this recommendation has been accepted and is now in force.

### (d) Member Status Change Reports

After processing status changes submitted by the counties, S.T.R.S. returns copies of the status change forms, punched cards, and listings to the appropriate county. Most counties visited during our review indicated that the listing was satisfactory for their purposes, and that the punched cards and forms were of no value to their systems.

We recommend that a questionnaire be issued to all counties to determine the potential for eliminating the process of returning forms and punched cards. Under this approach, the list would serve as the control over new member applications and status changes submitted by counties.

#### (e) Input Controls

We recommend that the membership section establish record or document count and "hash" control totals of member numbers prior to submitting new member applications and status changes to data processing.

Batch listings would be returned to the section for reconciliation with the input control data. The objective of this procedure is to provide assurance that the data transmitted is accurate, and that all documents have been processed.

# ELECTRONIC DATA PROCESSING SYSTEMS

The computer mechanization program presented in this report will have significant impact on simplifying the procedures of the Membership Division.

The major benefits of this program are presented below.

### (a) Active Member Statistical Records

The limited capacities and speeds of the present tabulating equipment require that the punched card statistical records for members be maintained in numerical sequence by county. This sequence results in processing problems for those teachers who serve in more than one county. Consequently, annual contributions records must be combined each year, duplicate statistical records must be maintained and county and district codes are significant to the present record keeping system.

Under the proposed system, a single statistical record would be maintained for each member and the files would be kept in social security number sequence. The need to retain county location codes or to report county location changes will be eliminated. The only source of county coding under the proposed system would be collected via the monthly report input data.

Equally significant is the fact that data processing records could be used as a source of information through an inquiry procedure. This approach will ultimately reduce the number of roster and member file reference activities.

### (b) Processing New Applications

Several functions presently performed by clerical personnel would be mechanized under the computer procedure. The new system will require rapid processing of new applications in order to establish the basic data processing record for accepting postings of monthly contributions.

The procedure would operate in the following manner:

- 1. Member applications would be briefly edited by the Membership Division. Incomplete forms will be returned to the appropriate county.
- 2. The applications would be batched, controls established, and the documents would be forwarded to keypunch throughout the processing day.

- 3. Data processing would connect the data to punched cards, and balance each batch to the pre-established control totals.
- 4. The proposed computer system would be programmed to edit all input, assign rates, and post the new data to the statistical master file.
- 5. Age, birthdate, social security number, and duplicate record discrepancies will be listed for investigation by the Membership Division.
- 6. Roster tabs, file labels and listings of new applications will be prepared by data processing.

### (c) Status Changes, Inquiries, and Rate Requests

The procedure for handling these transactions would be integrated with the processing of new applications. A single pass of all transactions would be made simultaneously each day against the membership statistical tape file record.

Listings of status changes and rate requests would be prepared and forwarded to the appropriate county. Inquiries for statistical or contributions data would be printed and forwarded to the requesting department within a twenty-four hour period.

### (d) Age Discrepancies

Age variances can automatically be verified as input data is processed by the computer. This procedure will contribute to a reduction in the number of files for processing at clerical work stations.

### (e) Investigation of Discrepancies

Annual reporting results in a massive volume of unidentified member and rate discrepancies to be investigated. Initially, the volume of items to be investigated on the proposed monthly reporting system will be equally as heavy. However, as these items are investigated and resolved, the frequency of error should diminish.

The format of the reports for investigation should be significantly improved under the computer system. In addition, the mechanized procedure for

determining these discrepancies will be greatly simplified. Investigation listings should contain a computer generated statement which will identify the type of error. This report would be prepared by making a single comparison to the master records as opposed to the multiple comparisons required under the present system.

# (f) Impact of Current Annual Statements

The present annual statement is distributed to teachers in about 18 months after the close of the school year. Under the proposed monthly reporting procedure, the delay should be reduced to 90 days. Initially, the number of inquiries from teachers should tend to increase, however, the experience of other state retirement systems indicates that a current and complete annual statement results in a reduction of member inquiries.

### (g) Refunds and Redeposit Status

Refund dates would be stored in the statistical record to provide control over the one-year limitation on issuing refunds and two-year limitation over options to redeposit funds after re-entering the Retirement System.

#### (h) Non-Member Records

Non-member records would be maintained to provide automated control over substitute and part-time teachers. Reports would be prepared and forwarded to counties as these teachers become qualified for membership.

### SUMMARY OF BENEFITS

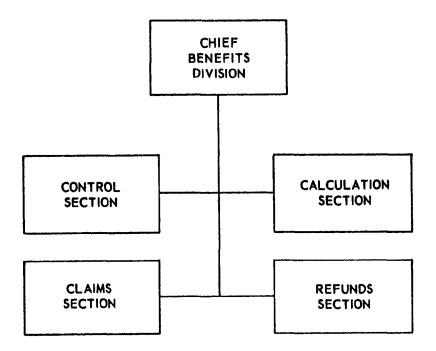
The proposed computer system is designed to provide the following benefits:

- 1. Reduces the number of roster and member file examination for approximately 50,000 status changes and rate requests per year.
- $2. \ \ Reduces$  the clerical editing requirement for new applications, status changes and rate requests.

- 3. Eliminates the posting of refund, re-entry and redeposit data to the roster file.
  - 4. Eliminates the manual system for initiating redeposit options.
- 5. Eliminates the manual assignment of contribution rate under either the present or proposed rate structure.
- 6. Simplifies the processing and investigation procedures relating to contribution reports.
- 7. Consolidates the total responsibility for maintaining all records related to members into a single division.

We are recommending the addition of four clerical positions to the Membership Division. We expect that a reduction of two positions could be achieved within eighteen months when the roster file system has been established.

# STATE TEACHERS' RETIREMENT SYSTEM PROPOSED ORGANIZATION BENEFITS DIVISION



### XI - BENEFITS AND VERIFICATION OPERATIONS

The major problems facing the Benefits Division cannot be resolved nor can service to retiring members be improved substantially until the Retirement System has complete and verified records of service for its members. Service prior to 1956 is not recorded in a manner required by the System to effectively process a retirement. We estimate that there are approximately 100,000 member records in this category.

While we are recommending that a combined Verifications Section be established within the Membership Division, this chapter presents our recommendations for both the benefits and verifications functions due to the interrelationships of these activities. Our proposed organization for the Benefits Division is presented on the facing page.

## RETIREMENT CLERICAL PROCEDURES

Approximately one-half the effort, cost, and elapsed time for processing a retirement is consumed by the Verifications Unit. This unit receives letters requesting retirement forms, processes retirement documents completed by members, and verifies member service.

Our recommendations which can be adopted immediately are outlined pelow:

- 1. The forms 368A (record of teaching service) sent to teachers with service prior to 1944 should be filed in the member file record.
- 2. As letters requesting retirement forms are received from teachers, the verification activity should begin immediately. The present practice is to start processing upon receiving the retirement application from teachers. This procedure would reduce by 30 to 60 days the elapsed time for processing verification papers.
- 3. The form F69 (record of teachers service) should not be required for completion by a teacher if the System has a form 368A on file. This procedure will eliminate the requirement for completing the entire service history form for about 20,000 teachers.

3. Once service has been verified by the Verifications Section, this record of service should be accepted for computing retirements. The procedure of re-computing and reviewing the service computation would be eliminated and these files would be routed directly to the computations unit.

# RETIREMENT BENEFIT CALCULATIONS AND QUOTATIONS

Six separate worksheets are used for calculating retirement benefits and for making quotations. In addition to benefit calculations, these worksheets are used for determining subventions to the local retirement systems.

The worksheets, although revised as recently as February, 1966, contain errors in some of the steps and omit other steps. Some specific examples of errors and ommissions are:

- 1. The worksheet used for calculating the disability minimum guaranteed benefit (form F 196.2 Rev. 2-66) should use the larger of 90% of the service retirement benefit or the actuarial equivalent of such benefit. In actual practice, the factor .90 exceeds the actuarial equivalent factor for all ages up to and including  $58\frac{1}{2}$  for both males and females (see Section 14359 of the Education Code).
- 2. Items (q) and (r) in the worksheet used for Disability Under Age 60 (Non-local) should be calculated only if credited service at disability retirement is at least 10 years and the disability allowance, as otherwise calculated, is less than 25% of the member's compensation for the three consecutive years when such compensation was highest; that is, Section 14370 of the Law is not being administered as written.
- 3. Worksheet F 19.6 (Rev. 2-66) relating to disability retirement prior to age 60 for a member eligible for a benefit from the Los Angeles system has two errors in connection with the calculation of the "Guaranteed Minimum Allowance":
  - "additional years to age 60" should be calculated only if the member is in non-local service at the date of disablement.
  - the "Guaranteed Minimum Allowance" should be based on the larger of the actuarial equivalent factor or 90%.
- 4. A person who qualifies for the minimum benefit of \$80 per year, per year of service, cannot receive an allowance which exceeds "75% of the final compensation of the retired member" as stated in Section 14356 of the Law. No provision is made in the worksheets to test this limitation.

The System is currently in the process of correcting these errors, and consolidating them into one generalized worksheet. In addition, programs are

currently being developed so that retirement benefit calculations can be routinely determined by using outside data processing equipment. The impact upon the System from mechanization of the retirement calculations, will not be significant until the System's records are brought up to date - in particular, until service credits are adequately recorded and verified.

In the interim, we feel that benefit quotations should be made a routine data processing function in the same way as retirement.

#### ESTIMATED RETIREMENT ROLL

The "built in" delay resulting from the service verification activity requires the computation of an estimated allowance. The objective of this procedure is to expedite the initiation of retirement payments to teachers on a schedule of forty-five days after the retirement effective date.

As indicated in Chapter VII (Organization) we recommend that the responsibility for processing these payments be transferred to the Retired Payments Section. In addition, the procedure should be revised in order to integrate both the estimated and retired rolls into a single system.

#### SERVICE VERIFICATION

A special Verifications Section was established under a special appropriation in 1965. The original objective of this section was to select, verify and record accumulated service for members with service prior to 1956. The initial effort was directed toward updating member records with service prior to 1944. It was expected that this project would reduce workloads in the Benefits Division and improve service to retiring members.

The first twelve months of operation have been disappointing in terms of total production compared to the total size of this project (100,000 member records). A clerical staff ranging from seven to ten personnel reviewed approximately 5000 files, however, only 2500 records were processed through the entire verification procedure.

We also found that the Verifications Section is engaged in processing records outside the original scope of this project. Of the 2500 records processed, only 30 percent of the total contained pre-1956 service. The remaining 70 percent of the files processed were for members who had entered the System since 1956.

At the current rate and mix of production, this project could take up to 20 years. We believe, however, that this program must be expedited under a revised organization and new procedures. In our opinion, the Retirement System cannot sustain the increasing volumes of retirements anticipated in the future by operating under current practice or procedures.

The factors which complicate the project are outlined below:

- 1. Many teachers do not have complete year-by-year records of their service. It is this data which serves as the basis for initiating the verification procedure.
- 2. Records at the county level were not uniformly maintained to meet the requirements of the System as specified by pre-1956 law. In addition, many of the older records are difficult to locate, and in some instances, the records have been destroyed.
- 3. Records of members' service at S. T. R. S. have not been maintained in a manner to permit a simple determination of service.
- 4. Under the present method of verifying service, increased production by enlarging the Verification Section staff could not be absorbed by staffs located at the various counties.

## (a) Combined Verifications Function

We recommend that the separate Verifications Section (in Benefits and Membership) be combined into a single unit and operate within the Membership Division. The section would be divided into the following units:

- 1. Control Unit to review files to determine the data required to establish service, and to initiate the inquiries necessary for acquiring this data.
- 2. Retiring Verifications Unit to evaluate service records and confirmations, and to determine the years of service for retiring members.

This unit would also process the verifications for members whose records are found to be in error during the normal course of record processing.

3. Active Verifications Unit - to perform the above functions for active members with unrecorded service prior to 1956. This should be the exclusive function of this unit. Their efforts must not be utilized for other projects or file processing as was the case during the first year of operation.

## (b) Selection of Records for Verification

The method for selecting the proper records for service verification and recording must be revised. The objective must be to select the records of members most likely to retire. In our opinion, the most practical method would be a selection based on age groups. The age group initially selected as a starting point should be the group within one to two years of the average retirement age. Programs through the block of 100,000 records would be achieved in descending order by age group.

The data required to determine the beginning age group would be most accurately determined as a by-product of the special actuarial analysis.

# (c) Methods of Determining Service

The verification process will continue to begin by matching a statement of teaching service prepared by the teacher with those records of service maintained by the Retirement System. Where major discrepancies occur, or in cases of substitute service, service prior to 1935, and military service, the counties must continue to be contacted.

A revised procedure for obtaining service data from counties must be made. The present method of verification was designed consistent with pre-1956 law. As stated earlier in this report, the records of many counties do not contain the data required to conform with this law. Our visits to selected counties indicate that service and payroll records vary by county and within a given county. Consequently, a single method of service verification cannot be firmly established.

We have proposed a revision to the law in Chapter V which enables the Board to authorize new methods for determining service in those instances where county records do not conform to pre-1956 law or where county records are no longer available. Judgements have been made in the past. However, we believe that any accelerated approach to recording service must be supported by a law which provides greater latitude in developing alternate methods for verification.

As a first step, we recommend that the Retirement System determine specifically the format, content, and filing sequence of records at each county or reporting agency. Based on an analysis of this data, management would select the most appropriate formula for determining service for specific counties. Where records at counties are no longer available or where the records of the Retirement System are as complete as those at the county, contacts with these counties would be discontinued.

The methods which should be adopted by the Retirement System, depending on the specific county records are:

- 1. Computing service on the basis of days worked would continue to be acceptable for those counties whose records were maintained in accordance with pre-1956 law. We recommend that the present practice of requiring counties to report specific days worked be discontinued. All counties should be permitted to conform to the reporting procedure for Los Angeles which simply requires a record of total days worked in the period for the year in question.
- 2. Computing service should be permitted on an earned to earnable basis. Many of the county records contain pay rates which permit a computation of earnable salary. Where earnable salary data is not available, comparable or average salaries (salary trend factor) for teachers in similar positions should be acceptable. It should be emphasized that under this latter approach, the number of contacts with counties could be substantially reduced by accepting salary data available in the records of the Retirement System since 1935.
- 3. Computing service on the basis of records available at the Retirement System would be required when county records are unavailable.
- 4. Computing service on the basis of a notarized statement from the teacher would be acceptable as a last resort. In our opinion, the Board should be required to approve the acceptability of service claimed in this manner.

### (d) Recommended Verification Procedures

Based on a revised program for verifications, this section outlines the major procedures to be followed.

- 1. Once the age group or groups have been selected for verification, data processing would prepare two listings. The first list would be in Social Security (member) number order and the second would be in county code sequence. The form for this latter listing would be designed as a control sheet to record the status of each verification activity.
- 2. Files would be pulled numerically from the county listings. If a record of teacher service is required, the forms 368A (statement of teacher service) would be forwarded in batches to the appropriate counties for completion by teachers.
- 3. In those cases where a statement of teacher service is in the file, the form should be examined briefly for claims of out-of-state service, military service, and for teaching service prior to 1935. The proper forms should be immediately dispatched to the appropriate agencies for verification. The county sequence control list would be date posted for each activity.
- 4. The file would then be reviewed for substitute service, and based on the particular county being worked, the appropriate sections of the data request form would be checked and mailed in bulk to the appropriate counties. As indicated previously, there will be some instances where counties should not be contacted due to the lack of records. The methods used to record service in these instances will be determined by management.
- 5. After the correspondence has been released, all files would be returned to the central filing system. As correspondence returns, it will be retained by the section until all correspondence required to determine service has been received. The files will then be requested as indicated by the control sheet, and verification processing will begin.
- 6. Once service is recorded, the verification process would continue through the present audit routine. This audit, however, would take place in the Membership Division.

## (e) Supervision and Training

In our opinion, the verification project is one of the most vital programs of the Retirement System. This activity has not received the necessary attention from management. It will be necessary to staff this operation with a male supervisor.

There is a definite lack of trained personnel to handle the problems

of substitute and military service verification. It has been necessary to route complicated work through a small group of trained people. This condition will not permit accelerated production. Every effort must be made to provide training, written instructions and procedures, and management decisions if this program is to become successful.

The progress of this project in terms of objectives compared to actual production must be reported to management each month and to the Board at  $\varepsilon$  ach of their meetings.

#### (f) Staffing and Cost

The staff for verifying pre-1956 service should be a minimum of twelve clerical personnel. The total program will cost about \$85,000 each year until the job is completed, which we estimate to be in approximately five to eight years. At that time, however, the verification staff for both the special project and for processing retirements should be substantially reduced.

# VERIFICATION OF POST-1956 SERVICE

Based on the heavy volume of verifications of service since 1956, there is evidence that many of these records may be in error. Most of these errors arise in the following manner:

- 1. Age discrepancies.
- 2. Rate errors.
- 3. Effective date errors.
- 4. Unrecorded service for substitute teachers.

As indicated in Chapter IX, Data Processing Division, the active membership statistical file should be edited by the computer in order to determine the extent of these error conditions. While it is not possible at this time to determine the volume of errors in the file or that will arise from a file review at

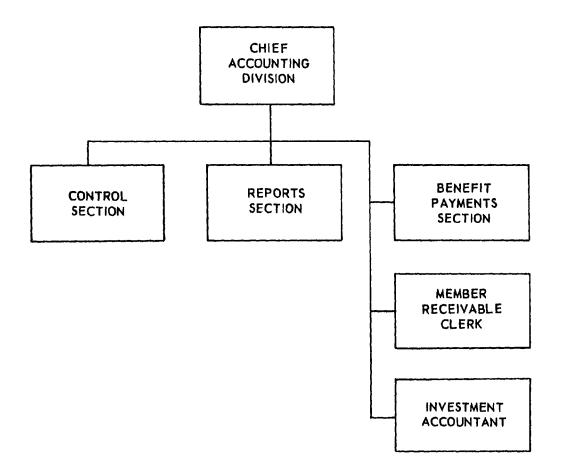
this time, additional staffing may be required for a period of time to get these conditions corrected.

#### SUMMARY OF BENEFITS

The major benefits of our proposed program for the Benefits Division and for verification of member service are:

- 1. Improves the present service to retiring members by starting service verification at the time of receiving the letter from members requesting retirement forms rather than waiting for completion of these forms.
- 2. Eliminates the procedure for requiring a statement of teachers service for those members who have previously issued a statement to the System.
- 3. Eliminates the process of recalculating service for those member records that have been processed through the verifications procedure.
- 4. Improves control over the estimated retirement roll and establishes a single system for both the estimated and regular retirement roll.
- 5. Establishes a capability and revised approach to the service verification procedure in order to expedite this vital project.

# STATE TEACHERS' RETIREMENT SYSTEM PROPOSED ORGANIZATION ACCOUNTING DIVISION



#### XII - ACCOUNTING DIVISION

The realignment of areas of responsibility, as set forth in Chapter VII, Organization of S. T. R. S., defines the responsibilities of the Accounting Division. In summary, the five major functions of this department should be:

- 1. Control, assuring that all processes involving dollar and service credit amounts are accurately and routinely carried out.
- 2. Reports, gathering and presenting all financial, budgetary, and operations data.
- 3. <u>Benefit Payments</u>, roll maintenance for all types of benefits disbursements.
- 4. <u>Member Receivables</u>, limited clerical support to a more completely automated billing system.
- 5. <u>Cash Management and Investment Accounting</u>, expanded cash fore-casting and investment accounting.

This division would <u>not</u> be responsible for recording members service and contributions, determining arrears amounts, determining redeposit eligibility, members statements or verification entries. It is clearly a matter of internal control that the same individuals who determine the amounts due or creditable to members accounts are not those who also process the transaction. Furthermore, the <u>entire</u> responsibility for member records, for benefit determination, etc., must rest within the division controlling that process. Cash Management and Investment Accounting will be discussed in the following chapter on Investments and Investment Administration.

#### CONTROL SECTION

At present, the control activities are carried out in several areas, including Auditing, Internal Accounting, Tabulating, Retired Payments and Benefits.

Transactions involving member accounts can in certain instances, reach data processing before controls are established. There exist no formalized methods to

bring together in one area all accounting related transactions in an organized manner. Source documents for accounting entries are, in many instances, untitled and difficult to trace.

#### (a) Expanded Activity

The timeliness and completeness of information will be improved substantially if one department is assigned the control over all dollar and service related transactions. The internal controls which should be inherent in any accounting system will also be improved when a control activity is separate from the department originating the information.

To function as an effective control unit, this section should include the following responsibilities:

- 1. Receipt of all mail containing contributions. Establishment of cashier controls.
- 2. Controls on monthly reports and all adjustments. Detail coding and error correction will be performed by the Membership Division.
- 3. Controls on benefit and refund disbursements, including payment of claims and all rolls.
  - 4. Controls on transfers of members accounts.
- 5. Data processing batch controls. Receipt and batching of all entries affecting accounting and members records.

It must be emphasised that the Control Section will not be concerned with the detail content of each transaction, but will assure that transactions carried out by other sections meet the controls and are valid.

#### (b) Data Processing Controls

A control section now is functioning in the tabulating department.

The duties of this department include:

- 1. Pre-keypunch control, batching, and document identification.
- Balancing of transaction listings.

- 3. Work scheduling and job identification.
- 4. Document storage and routing.

Step (2) above in many cases is performed by either Retired Payments, Internal Accounting, or Auditing. In other cases, the balancing is done within the Control Section.

The revised Control Section should be responsible for steps (1), (2) and (4) above in all instances. Totals balanced should include dollar amounts, service credits, document counts and cash totals of account or member numbers. Data Processing should continue to perform its own work scheduling and job identification.

#### (c) Scheduling and Documentation

A most important advantage to be gained by a single Control Section is the ability to secure compliance to a schedule of information flow. The monthly reporting system will make this necessity more acute, as deadlines must be established down to the day of the month. Delays cannot be tolerated as delayed input will compound workload problems.

This unit must be prepared to enforce deadlines for reporting counties and for internal sections. To assist in this enforcement the law should be amended to allow that interest be charged to any county that is over 30 days behind in reporting contributions. As the remittance will accompany the report, the System, in fairness to members must have funds on time to reinvest the money quickly. Enforcement over internal sections' meeting deadlines will be helped by alerting management of any delays as they occur.

All detailed support for routine transactions will be systematically filed. This section should be the source for normal recurring monthly journal entries and routine transaction statistics. Listings, controls and files must be logically arranged, completely identified and quickly accessible.

#### REPORTS SECTION

The Reports Section is an expanded activity over present general accounting. The full scope of reporting should include:

- 1. Financial reporting
- 2. Actuarial reporting and analysis
- 3. Budgetary reporting
- 4. Performance reporting

Items (1), (2) and (3) are being partially provided by three separate individuals in the System. Item (4) is not being systematically accomplished at all. Discussion of actuarial reporting and analysis will be in Chapter XIV, Actuarial Operations.

#### (a) Financial Reporting

As was previously observed in the Funds Structure chapter (IV), the System's financial reporting is insufficient. The reports necessary to provide a meaningful financial report of the System should show in addition to the present comparative summary of income and outflow:

- 1. A balance sheet with the recommended simplified reserve structure. In addition, actuarially determined present values of accrued liability for the State should be included.
- 2. An analysis of the change in the reserve balances during the fiscal year thus ended.
- 3. The results of an actuarial gain and loss analysis showing the components of the resulting gain or loss.
- 4. Interest experience reported on the basis of investments and cash rather than of member reserves.
- $\,$  5. A projection of State costs for a minimum of 20 years into the future.

In response to previous criticism of the annual report by the Auditor General, the Board has stated that the added expense of a large annual report in printed form is an unnecessary added expense. We agree that the annual report

should not be an expensively prepared document. However, we recommend it be expanded to include the complete financial position of the System, which is not now available.

The essential elements of a well operated accounting activity must include the following improvements and additions:

- 1. <u>Simplified Chart of Accounts</u> The recommended elimination of the several funds and the elimination of transfer accounts would reduce the required accounts to a fraction of the present number.
- 2. <u>Integration with Data Processing</u> Account codes and transaction codes should be designed to allow the data processing routines to generate journal entries and maintain a maximum number of general ledger accounts by machine.
- 3. <u>Standardized Journal Entries</u> The existing accounting procedures do not include a formal set of journal entries, although the development of a set of entries is partially complete.
- 4. <u>Timeliness in Closing</u> Presently, books are not closed for four months after the end of the fiscal year and are never up to date because of the 20 month delay in posting member records. Monthly reporting and the establishment of a control section should assist in providing faster, more accessible information.
- 5. Adequate Supporting Documentation Traceable, well labeled supporting listings and source documents are features which must be greatly improved. The control section will be responsible for much of the recurring information to support accounting entries.
- 6. <u>Incorporation of Actuarial Analysis</u> Annual actuarial studies would become an integral part of the accounting and financial reporting process. The results of this annual valuation would be the basis for determining year end reserves and contributions of the State.

#### (b) Budgetary Reporting

The Department of Finance has introduced the Program and Budgeting System (PABS), intended to provide more meaningful reporting by State agencies. The 1966 Annual Report of the Teachers' Retirement Board was submitted to the Governor in this format.

The PABS program could have had beneficial impact on the administration of the System. Statistics have, for the first time, been gathered routinely

and statistical forecasts have been initiated. Programs have been analyzed and set forth with objectives to be met.

In the System, however, the use of a program budgeting system has not been effective for the following reasons:

- 1. <u>Statistics</u> have not been readily available. Both processing volumes and data from members' records have not been systematically or frequently updated.
- 2. The organization structure has not assigned responsibilities for the major program elements.
  - 3. The budgeting and accounting activities have been separated.
- 4. The determination of what constitutes valid <u>measures of performance</u> is not entirely clear, with respect to this System.

The establishment of a Control Section and a Reporting Section would improve the ability to gather data and report in the manner required as an integral part of the accounting process.

In support of this program, we also recommend the administrative ("General Fund") account structure be redesigned so that both functional and program cost information can be readily obtained. The person responsible for the performance reporting section should become thoroughly familiar with both financial and budgetary reporting requirements.

#### (c) Performance Reporting

Successful administration of the System requires that agency management define and measure the operating areas of concern to them. This concept should be given greater depth through a plan of setting measurable objectives and reporting the actual performance to these objectives.

Two compelling reasons arise that increase the need for a program of regular performance reporting:

1. <u>Monthly Processing</u> - The short cycle time of monthly reporting will require closely held deadlines and the ability to keep current.

# STATE TEACHERS' RETIREMENT SYSTEM SUGGESTED PERFORMANCE REPORT

STRS			HLY PE H OF				· · · · · · · · · · · · · · · · · · ·		
DIVISION/	FUNCTION	VO	VOLUME PROCESSED			BACKLOG		COMMENTS/	
SECTION	CONCITON	Actual	Δ	Unit MnHrs	Std MnHrs	Actual	Incr or Decr	Total MnHrs	ACTION
Momborship				·					
Files -	Pulled/Untilled Out Filed/Untiled Files Reviewed Files Complete Arrews:Billed	.5080	+200	.20	. 2.5	300	+200	20	Reducing
	Out	-	_	_	~	6000	-1000	_	in Field Files
	Filed/Untiled	6200	+300	.35	.35	1200	+300	50	, ,,,,,
Verification	Files Reviewed	2 200	-100	.10	.05	35000	-5000	2000	Training
	Files Complete	1300	+100	3.90	3.50	2000	1406	6000	2 NewStaff
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#### **EXPLANATION OF HEADINGS**

Actual—as reported by statistics kept

\$\Delta\$—difference from forecast

Unit MnHrs—total hours expended divided by the volume

Total MnHrs—based on standards, the backlog represented in man hours

Std MnHrs—standards, developed historically
Incr or Decr—increase or decrease over last month

FIGURES FOR ILLUSTRATIVE PURPOSES ONLY

2. <u>Program of Change</u> - Implementing far reaching systems and data processing changes require on-schedule performance.

On a continuing basis, management must be more aware of administrative problems as they arise and know what action should be taken.

From historical processing volumes and member statistical card data, month by month projections of anticipated processing volumes would be developed annually. These volumes would assist in determining staffing required in the various sections. However, clerical staff should be cross trained and shifted as demands of various sections vary from month to month, or more frequently.

As a means of providing management with the necessary performance information and enabling them to take timely corrective action, a monthly performance report should be prepared. The report should have format and content as shown on the facing page. The objective of this report is to highlight performance exceptions, e.g., deviations of expected volumes and effort, substantial changes in backlogs, and missed scheduled deadlines.

The Control Section should be responsible for accumulating volume and schedule performance information. From the various sections, the Reporting Section will obtain additional volumes, work hours, and backlog information.

#### (d) Reporting System

To summarize, the elements of the existing reporting system must be drawn together, strengthened and formalized. All reports have a direct interrelation to each other, as shown in the chart in Exhibit L. Therefore, the entire reporting system should be the responsibility of one section.

#### MEMBER RECEIVABLES

As a service to members who are redepositing or who are paying in amounts to bring their account up to date, the System maintains an installment payment plan. Payments are posted to members' records only when completely paid up, and in the interim, are recorded "in suspense." The procedures for member billing

are a combination of clerical and machine procedures and are highly complex.

#### (a) Present System

Receivables and unapplied payments in suspense total \$2.2 million and involve 1500 members. The direct costs to service these accounts is over \$6 per account per year. Many accounts run as long as five years and the cost for these accounts are much higher. The tabulating equipment keeps a record of payments, prepares monthly statement cards and computes interest. Internal accounting duplicates much of the effort of tabulating by interfiling payment cards and hand typing data for each cash receipt. All closing entries are made by hand, requiring that the file be pulled, all payments be verified, and a complicated posting made to "clear suspense." Controls are poor over the suspense clearing entries.

#### (b) Redesign of Receivables System

The present system could not be fully converted to an electronic data processing system in its present form. Tabulating procedures are overly complicated, and clerical intervention is too extensive. The receivables system, therefore, should be redesigned using existing tabulating equipment without waiting for the availability of electronic data processing. The redesigned system would then be compatible with the electronic data processing equipment for easy conversion. The proposed receivables system would limit the clerical workload, freeing up staff for other duties.

Such a receivables system should include:

- 1. Balance Forward Records Only. The record will contain only the balance brought forward and the activity during the current month. This method will eliminate the extensive clerical filing operations and reduce machine usage. This is a recognized method and does not lose the historical record but puts it in a different format.
- 2. Machine Prepared Posting Entry. The hand prepared distribution into the many fund subaccounts can be eliminated by the previously recommended revised fund structure. This procedure can be so simplified that a punched

card can be generated that will serve as the posting to the member's account.

3. <u>Simplified Cashiering and Clearing of Collections</u>. Cash remittance cards would go directly to Tabulating to produce a daily cash list. This list would be balanced to the deposit tape and used as detail support for the Report of Collections. Lump sum collections would also be processed in the same manner.

The Control sections will be responsible for maintaining input and output and for balancing receivable controls. The one clerk responsible for billing will only need to deposit money, handle overpayments and carry out any necessary correspondence.

#### BENEFIT PAYMENTS

Various forms of benefit payments involve recurring monthly payments, which are disbursed on "rolls." Several sections are now involved in preparing entries, maintaining and controlling these rolls, as follows:

- 1. Retired Payments Section: Retirement, disability and payees under options (maintaining and controlling).
- 2. Office Services Section: Survivors' Allowance and one-half continuance rolls (preparing and maintaining).
- 3. <u>Benefits Section</u>: Estimated roll (preparing, maintaining and controlling).

Internal controls and consistency of duties will be improved if all preparation of benefits amounts is accomplished in the Benefits Section and control is separated from the maintenance of the roll.

We recommend a section called the Benefit Payments Section be established, whose duties should be expanded from the existing Retired Payments

Section to include also the maintenance of the estimated, disability and survivors rolls. Maintenance would include processing all new entrants, removal, or correction entries, but would not include keeping controls. This latter responsibility would be shifted to the Control Section.

#### (a) \_ Duplicate Rolls

Two separate data processing records are currently maintained, one

within S. T. R. S. and another at the disbursement office of the State Controller. All changes to the roll are processed against both files. S. T. R. S. maintains additional data in the payment which is required for internal accounting purposes. This double processing requires duplication of machine and clerical time. Deadlines for changes to the roll are earlier than they otherwise would have to be in order that both data processing files are updated in time. All changes subsequent to the deadlines must be hand processed for the current month's payments.

In exploring the elimination of one of these two records we considered the following approaches:

- 1. Eliminate the System's Roll Code, keypunch and balance changes only and allow the Controller's roll to act as the master roll. Certain needed items of data would have to be programed into the Controller's system (subventions, annuities, insurance codes) to allow the System to make the necessary accounting entries.
- 2. Eliminate the Controller's Roll The State Employees' Retirement System sends to the Controller a tape each month that contains the entire roll. This simplifies the Controller's work. The System could do likewise, and save the Controller's office additional work. About two hours of outside computer time per month would be required to convert the System's card files to tape until the S. T. R. S. equipment is capable of assuming this application.
- 3. Produce Checks on the System's Own Equipment This would eliminate the necessity of dealing with the Controller's office except for an audit and resimbursement of funds disbursed. The Controller's office, however, has systems and equipment to quickly produce warrants that can be reconciled by machine.

In consideration of the recommended plan for electronic data processing, we feel the alternative (2) above is the most practical approach. Such a change will take the System in the direction it will be moving in the future, not involve extensive systems revisions that must later be reversed.

#### (b) Affidavits

The affidavit procedure is designed to verify that those receiving payments are still alive, and that the receiver is a bonafide person entitled to that payment. Under present procedures the roll is produced once per year in

advance. All changes to the file are made by hand as no provision has been made to use the tabulating machines to recognize new entrants to the roll.

Retired Payment personnel make the changes although Audits is responsible for the procedure. This destroys the independent control of Audits over the file.

We recommend that the new Control Section assume full control over the affidavit function. This section would determine monthly which group of roll members will be circularized and request Data Processing to produce that segment of the roll. Newly retired members can be selected out from the affidavits by machine methods, by using date and change codes, but these cards should also be test checked by Control to see that the coding is valid.

#### SUMMARY

Within the Accounting Division the duties and responsibilities would be shifted to provide:

- 1. A Control Section with complete responsibility for accounting and data processing controls.
- 2. A Report Section with added duties of more complete financial and operating information.
- 3. <u>Member Receivables</u> must undergo a redesign using the present tabulating equipment.
- 4. <u>Benefit Payments</u> will be an expanded function over the present Retired Payments. Machine procedures for rolls and affidavits must be altered.

These recommendations would serve to strengthen controls, centralize the preparation of accounting information and simplify certain procedures.

#### XIII - ACTUARIAL OPERATIONS

In this chapter we review the duties of the actuary and the actuarial methods and assumptions currently used by the System. We recommend that the responsibility for performing the various actuarial functions be reallocated, that the actuarial information produced and reported by the System be expanded and that the assumptions used in estimating liabilities and determining member contribution rates be subject to critical annual analysis.

# THE POSITION OF "ACTUARY"

The job description for the position of actuary for the System, as it appears in the specifications of the California State Personnel Board, calls for a person who can, "do highly skilled retirement system actuarial work; . . . give technical direction and assistance to employees doing actuarial and claims work; and . . . do other work as required."

#### (a) Duties of the Actuary

The typical tasks and the educational and experience qualifications for the position of actuary are contained in the California State Personnel Board's specifications (code #5413, established November 8, 1963).

The actuary, as a technical advisor to the Retirement Board, supplies information relating to the technical actuarial aspects of the System. He makes specific recommendations as to member contribution rates, as to the various factors required in the administration of the System, and as to the actuarial assumptions (interest, mortality, salary progress, etc.) to be used in calculating such rates and factors. In addition, he interprets and reports on the results of periodic actuarial valuations and performs experience studies.

The actuarial assumptions and the methods used to obtain and employ these assumptions are reviewed and tested for their appropriateness by an independent firm of consulting actuaries. The consulting firm has, in the past, performed the voluminous calculations associated with the valuation of the System's liabilities. In addition, this firm has been employed to determine the costs of various legislative proposals affecting the System (for example, the cost of providing credit under the System for service performed in other states).

In addition to the tasks mentioned above, the actuary has assumed the function of reviewing claims for disability retirement as well as physically checking the calculation of disability allowances. The reason for the latter is that disability calculations are complex and the worksheets available are incorrect in several respects (see Chapter XI for specific examples of errors in the calculation worksheets).

#### (b) Present Job Description

The educational requirements for the position of actuary are:

- "1. Equivalent to graduation from college with specialization in mathematics. (Additional qualifying experience may be substituted for required education on a year-for-year basis.) or
  - 2. Possession of a fellowship in the Society of Actuaries."

The interchangeability of (1) and (2) above is difficult to justify. First, it is very rare for an individual without a college degree to become a Fellow of the Society of Actuaries. Second, passing the examinations for fellowship in the Society of Actuaries requires, on the average, approximately ten years as reported by Professor Carl H. Fischer of the University of Michigan (see page 83 of Volume XVI of the Transactions - Society of Actuaries).

#### (c) Revised Job Description

We feel that the System needs one or more staff members who are technically proficient and conversant with actuarial matters; however, we do not believe that a professionally qualified actuary is required by the System. Also it would be difficult to attract or retain a fully qualified actuary because of the limited scope of the job and the limited salary available. Instead, we feel that the position of "actuarial coordinator" should be established. The candidate for this position should meet the same educational and experience requirements as are now required for the position of actuary. However, the specifications for the job would make it clear that a fully qualified actuary is not required.

#### (d) Revised Functions

The functions of the actuarial coordinator would be to:

- 1. Perform complex calculations.
- 2. Act as an advisor to the data processing department in relation to the actuarial requirements of the System.
  - 3. Assist in developing computer applications of actuarial work.
- 4. Advise the Teachers' Retirement Board and its appointed officers on questions of a technical nature.
- 5. Perform, under the direction of an independent actuarial consulting firm, actuarial valuations and cost estimates of legislative proposals.
- 6. Review drafts of amendments to the Retirement Law which affect benefits.

In amplification of item (5), the actuarial coordinator would be responsible for the mechanical aspects of the actuarial valuation (including gain and loss analyses). The consulting firm, which can provide professionally qualified actuarial direction, would review the procedures and would be responsible for interpreting the results of the valuations. In short, the roles of the actuarial coordinator and the consulting firm would be reversed from what they are now. The consulting firm would be responsible for technical guidance and report supervision, and the actuarial coordinator would be responsible for mechanical procedures which would be performed on the System's own computer equipment.

#### (e) Recommendations

We recommend that:

- 1. The title "actuary" be eliminated from the System.
- 2. The position of "actuarial coordinator" be established.
- 3. The job specifications for the position of actuarial coordinator be similar as to education and experience to those for the position of actuary, but clearly do not call for full qualification as an actuary.
- 4. The mechanical aspects of the actuarial function (actuarial valuations, etc.) be performed within the System.
  - 5. A consulting actuarial firm be retained to:
    - provide technical guidance and review the results of actuarial work performed by the System.
    - assist in the preparation of routine annual valuation reports.
    - establish procedures for costing legislative proposals.

#### ACTUARIAL VALUATION METHOD

Section 13858 of the Teachers' Retirement Law states, in part that:

"The board shall keep in convenient form such data as is necessary for the valuation of the Retirement System. In not to exceed six-year periods after June 30, 1944, the board shall make an actuarial investigation into the mortality, service and other experience of members and beneficiaries and shall make an actuarial valuation of the assets and liabilities of the Retirement System."

Actuarial valuations of the System's assets and liabilities have been performed as of June 30 in the years 1950, 1954, 1960 and 1964.

### (a) Shortcomings of the Current Method

The actuarial valuation reports, published by the System, present the financial status of the System on the valuation date (i.e., the dates mentioned above). The reports are satisfactory as far as they go but they have the short-coming of not portraying to the reader the consequences of failing to fund future obligations in advance. No scientific projections of State outlays

are currently being made. Instead, rough approximations are made only as relates to expected outlay over the two or three year period following the valuation date. The same criticism can be made of the procedures employed in pricing out proposed benefit liberalizations.

#### (b) Misleading Comparisons

Examination of the trend of State outlays over the past several years can be very misleading as a measure of future costs. Consider the case of retirement allowances where the State's contribution for a year is equal to (1) minus (2) minus (3) as follows:

- (1) = total allowances paid
- (2) = total annuities provided by the accumulated contributions of the members who have retired
- (3) = contributions of School Districts and other employing agencies

A rapid expansion in teacher payrolls, resulting from an increase in the number of teachers or from salary increases will have only a long-term effect on (1) and (2), but will cause an immediate increase in (3). The result is that the State outlay will tend to drop sharply in the short-term but increase more rapidly in the long-term than previously expected. The mistaken conclusion might be reached that the State outlays, as a result of this phenomenon, were leveling off or even declining whereas this expansion in payrolls actually causes an acceleration in the development of the State's liability for future pension payments.

#### (c) Scientific Projections

The true effect on the System of the situation described above would be more intelligible to the layman if the actuarial report were expanded. This expanded report would contain, in addition to an actuarial balance sheet, the results of a scientific projection of State outlays over the 15 or 20 year

period following the valuation date and an analysis of actuarial gains and losses (see subsequent discussion of actuarial assumptions in this chapter).

#### (d) Recommendations

In order to more fully apprise the State and the public of the status of the System and to obtain realistic cost estimates of legislative proposals we recommend that:

- 1. Scientific projections, showing the expected level and incidence of State outlays, be made a part of the valuation procedure.
- 2. All proposed liberalizations of the plan be priced out in connection with the actuarial valuation, or as a special study.
  - 3. Actuarial valuations be performed on an annual basis.

The reasons we recommend that actuarial valuations be performed annually are that:

- the required data will be available within the System
- the additional cost of performing this function within the System will be minimal
- cost projections would become subject to frequent review
- gain and loss analysis results, over a period of several years will form the basis for revising the actuarial assumptions, and therefore such analyses should be performed as frequently as possible.

# ASSUMPTIONS USED IN ACTUARIAL VALUATION

The purpose of an actuarial valuation is to estimate the State's liability for pensions and other benefits to be provided by the System. These benefits include allowances to be paid to currently retired members and to members who will retire in the future. In addition, estimates must be made of the liability for disability pensions and the liability for benefits to be paid upon the death of a member before or after retirement.

## (a) Assumptions for Calculating Liabilities

The calculation of these liabilities requires the use of assumptions as to:

- 1. How long the member will live after retirement.
- 2. The age at which the member will retire.
- 3. Future salaries of the members upon which their future contributions will depend.
- 4. The final compensation of the members who will retire, since their benefits are based on their final compensation.
  - 5. The level and incidence of rates of termination of service.
  - 6. The level and incidence of rates of disability retirement.
- 7. The level and incidence of mortality rates in order to estimate the costs of lump sum death and survivors' benefits.

#### (b) Experience Studies

The validity of the various assumptions used by the System is determined by performing experience studies. In a letter dated May 2, 1962 the actuary presented his recommendations relating to actuarial assumptions to the Retirement Board.

In this letter the actuary explained that the number of deaths <u>expected</u> by the existing mortality table, adopted in 1954, exceeded the number of actual deaths during the three and one-half year period ended December 31, 1961; that is, the mortality table could no longer be considered a conservative one. As a result, a new mortality table was prepared which produced an excess of <u>actual</u> deaths over expected deaths for the same three and one-half year period.

From the standpoint of financial impact on the System, the relationship of actual to expected deaths measured in terms of dollar reserves released is what should be analyzed rather than merely the number of deaths. In other words, the appropriateness of the mortality table should be judged after determining whether the System in the aggregate, experiences a dollar gain or loss from mortality experience. If the actual reserves released exceed the expected reserves released the System experiences a gain; if expected reserves released exceed actual reserves released, the System experiences a loss.

The following is a detailed description of the procedure employed in developing the System's current salary scale, which salary scale was retained in 1962 by the Retirement Board on the actuary's recommendation:

- average annual salary rates, for ages 20 through 59, were tabulated (separately for males and females), based on salaries in effect on July 1, 1956.
- the average rates thus determined were smoothed by averaging the rates for each three consecutive ages.
- the resulting smoothed average rates were divided by the smoothed average rate at age 59, to obtain at each age a salary "index" figure.
- the index figures thus developed were smoothed by the same method in order to form a smooth series of factors for all ages, which series constituted the salary scale.

In using the method just described, the System developed what we consider to be an extraordinarily "flat" salary scale (as mentioned in the chapter entitled "Proposed Plan"). One reason for the flatness of the salary scale is that California found it necessary to recruit teachers aggressively in the years following World War II and used attractive starting salaries to facilitate the recruiting process. This caused the percentage difference between the salaries paid experienced, older teachers and those paid inexperienced, younger teachers to shrink. This effect was still felt in 1956 and to some extent is probably felt even today. Another influencing factor, is that there is a considerable flow of teachers in and out of the profession, many teachers returning to the profession after prolonged absences. Since the salaries paid are based on qualifications and experience and since experience does not relate directly to age,

salary variation by age is not an accurate guide to future salaries. In view of the direct relationship between final salary and retirement allowances it is imperative that realistic projections of future salary be made. An analysis of gains or losses to the System arising from actual salary experience differing from anticipated experience must be performed as a basic part of the actuarial valuation procedure.

Although a gain and loss analysis is not routinely performed by public retirement systems, many of the largest private pension plans in the country employ the method. Since the intent of the Legislature, as stated in Section 14109 of the Retirement Law and as reaffirmed by the Joint Legislative Retirement Committee on March 23, 1967 is that the member's current contributions are to provide approximately 50% of the cost of his current service allowance, it is essential that a gain and loss analysis be performed.

#### (c) Gain and Loss Analysis

In order to ensure that the assumptions used by the System are appropriate we recommend that a gain and loss analysis be incorporated into the annual valuation procedure and that these results be included in the System's annual report. The results of the gain and loss analyses will form the basis for adjusting the actuarial assumptions.

# XIV - INVESTMENTS AND INVESTMENT ADMINISTRATION

The System has invested in excess of \$1 billion in a portfolio that consists entirely of corporate and government bonds. The policies followed by the investment officers, who work jointly for the System and S. E. R. S., have been set forth by directive of the Retirement Board. Although allowed to do so by law, the System has not invested in mortgages. By the request of the Board, the System exempted itself from the authorization to invest in corporate equities, as set forth in Proposition 1, approved by the voters in 1966. The present (1966 fiscal year) interest yield on investible assets was 4.26%, not 4.49% as reported in the annual report. The latter percentage was based on interest creditable to reserves as of the previous fiscal year end.

#### EFFECT OF POLICIES

As was previously discussed in Chapter III entitled Proposed Plan, the investment income experience of the System has a direct impact on the level of contributions required of the members under the 50-50 concept. We believe the current policies of the System regarding investments are not in the best interests of the membership or of the taxpayers of this state. Both parties have a direct interest in seeing that maximum use is made of the assets of the System so that members' contributions and the State's liabilities and outlays are reduced.

Based on the premise that an improved interest yield on investments is essential, one or both of the two approaches should be considered by the Board.

l. Initiate an aggressive investment policy utilizing all the alternatives for investment available and the facilities of the expanded  $S.\ E.\ R.\ S.$  investment staff.

2. Utilize the facilities of major insurance companies or banks who are equipped with technical staff, computerized programs and the necessary financial resources.

In our study we were requested to review only the administrative procedure of the System's investment program. We feel, however, that policy and procedure are not entirely separable. The investment policies directly effect the contribution rate and State costs, hence the attractiveness of the proposed plan which adheres to the 50-50 concept.

#### PURCHASE OF ANNUITIES

The System has never taken advantage of the facilities available through the major life insurance companies for the purchase of annuities under group annuity contracts.

In recent years the life insurance companies have revamped their group annuity contracts in order to make them as attractive as possible for large pension funds. The life insurance companies now have available to them so many attractive investment opportunities that they are in a position to offer annuities at purchase rates which are by far the lowest in recent history.

#### (a) Purchase from System

When a member of the System retires his accumulated contributions are used to establish for him an annuity in whatever monthly amount they are sufficient to provide. In effect, what happens is that the member purchases an annuity from the System. The amount of the annuity is determined by means of a set of annuity factors. The factors are calculated using assumptions established by the System's Board as to expected future rates of interest and mortality and are changed from time to time by the Board on recommendation of the System's actuary.

#### (b) Purchase from Insurance Company

Instead of providing annuities from its own funds, the System could

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# COMPARISON OF MONTHLY AMOUNT OF ANNUITY PURCHASED BY \$10,000; INSURANCE COMPANY VS SYSTEM

	Insurance Company		Syst	cem	Insuranc	Ratio Insurance Company to System	
Age	<u>Male</u>	<u>Female</u>	<u>Male</u>	Female	Male	<u>Female</u>	
55	\$ 66.94	\$ 60.85	\$ 54.88	\$ 51.75	122%	118%	
60	75.24	66.94	61.39	57.35	123	117	
65	87.12	75.24	70.31	65.16	124	116	
70	103.73	87.12	83.22	76.27	125	114	
75	127.36	103.73	101.96	92.51	125	112	
80	160.36	127.36	131.11	117.10	122	109	

enter into a special form of "terminal funding group annuity contract" with a life insurance company. The procedure would be for the System to purchase an annuity from the insurance company under this contract for each member as he retires in the future. The System would also purchase on the effective date of the contract, using existing reserves for retired members, an annuity for each member who has already retired. It is not possible to get a firm rate quotation from an insurance company without providing a considerable amount of accurate and detailed data which it would take several months to compile. However, we have been able to obtain from a major life insurance company a preliminary illustrative rate quotation based upon rough estimates of the facts relating to the retired members of the System and the reserves held for them. The quoted rates include provision for all expenses of the insurance company, including premium taxes. Although these rates are preliminary, they are still representative of what can be accomplished through such a contract. In fact, we believe that a firm quotation would contain rates even more attractive than those quoted.

## (c) Reduction in State Outlay

To get a simple basis of comparison of the annuity purchase rates offered by insurance companies with those used by the System, we calculated the amount of monthly life annuity which can be purchased by \$10,000 using the insurance company's rates and the System's rates and ratioed the two. The results are shown on the facing page.

The total amount of the member annuity portion of service retirement allowances paid during the year ending June 30, 1966 was \$10,800,000. The distribution of this amount by age and sex is not readily available from the System. We can therefore only make a rough estimate of the increase in annuity purchased,

and hence the reduction in State contribution, resulting from purchasing annuities from an insurance company instead of continuing to use the annuity factors now in effect. However, it seems reasonable to predict that the initial annual reduction in State outlay will be of the magnitude of \$2,000,000. In addition to this reduction the insurance company will be obligated to pay a premium tax of 1% (or slightly less, depending on real estate tax credit) to the State of California. The combination of reduced outlay by the State and increased revenue to the State should approximate \$3,000,000 the first year.

In order to raise sufficient cash to pay the insurance company's premium under a group annuity contract it would be necessary to interrupt the flow of new money into the System for a number of months and probably also do a certain amount of liquidation of existing investments. The insurance company we have talked to is prepared to make its facilities available to the System in carrying out this program in order to minimize loss and enable the System to achieve the optimum investment result on the balance of its portfolio. It is to be expected, however, that the System will realize some loss on liquidation of securities as an offset to the gain resulting from investing in annuities. We believe that before the Board invests in annuities it should investigate the relative capacities of the System and the major life insurance companies for the investing of annuity reserves and the assumption of the annuity risk. We believe that the Board should only invest in a group annuity contract when it is convinced that the insurance company of its choice can not only save the State money initially, but is actually better equipped than the System to handle this type of investment and assume this type of risk.

#### (d) Recommendations

We recommend that:

1. The law be amended as necessary to permit the Teachers' Retirement

Board to enter into group annuity contracts with life insurance companies.

2. A study be made to secure firm bids from various life insurance companies as to annuity purchase rates and terms and to bring out clearly for consideration by the Board the pros and cons of investing in annuities.

#### MORTGAGE INVESTMENTS

The question of investing a part of the investment portfolio in mortgages has been considered by the Board.

The sequence of events leading up to the Board's final decision is best decribed by summarizing the significant points of the results of the Teachers' Retirement Board meetings.

#### (a) Meeting of July 29, 1966

Mr. William E. Payne of the S. E. R. S. gave a statement regarding the role which the S. E. R. S. has played in mortgage investments, and how successful the program had been.

At the conclusion of the meeting on July 29, 1966, it was decided that the Board was in no position to make any decision at that time but a special committee was formed to study the matter.

#### (b) Meeting of September 23, 1966

The Board unanimously approved investments in mortgages on California real estate subject to the following conditions:

- Total investment up to a maximum or not to exceed 25% of the portfolio
- Annual investment up to a maximum or not to exceed 50% of annual amount currently available for investment
- The employment of expert personnel required to advise the Board on a course of future action as recommended by the Executive Officer
- Subject to the establishment of criteria to be approved by the Board

The Executive Officer was directed to proceed with the establishment of a position for a mortgage expert.

#### (c) Meeting of November 4, 1966

The Executive Officer reported to the Board that funds requested in the 1967-68 budget for a staff to operate a mortgage division had not been approved by the Department of Finance. The Board then approved unanimously a resolution to rescind its previous motion that the System in coming months set aside money for the purchase of mortgages.

### (d) Administration of Mortgage Investments

We have reviewed the administration procedures to handle the System's mortgage investment program with the Investment Officer of S.E.R.S. From purely an administrative point of view he felt there would be little difference in the handling of mortgages from bonds. It was felt that if a mortgage formula were established by the Board then the process might in fact be simpler than bonds. It was concluded that additional accounting staff would be required to handle mortgage investments. The increased cost to the System would be minimal.

The Executive Director of the System indicated that the Board felt that the System required a full-time expert in mortgage investments who is close to the operation of the System who could advise the Board.

The decision to invest in mortgages has, therefore, reached an impasse because of differing opinions on what relationship between investment staff and agency is necessary to successfully administer a mortgage investment plan. These differences of opinion must be resolved. S.T.R.S. has over the past year, foregone substantial potential increases in investment income. Had S.T.R.S. invested 50% of their new money in the last six months at the interest experience of S.E.R.S. mortgage investments, additional income

could have approached one-quarter million dollars. Staffing considerations should not stand in the way of such a large potential.

#### EQUITY\_INVESTMENTS

In a recent survey entitled "Administration of State Fund Investments" conducted by the Council of State Governments, of 44 systems which
covered teachers, 32 were authorized to invest in common stocks. As the S.T.R.S.
is clearly in the minority on this matter, we suggest that this policy be
constantly reviewed. The necessity of going to the voters should not stand
in the way, if there is clearly an advantage to be gained.

#### OTHER INVESTMENT SERVICES

In exploring alternatives for administering the System's investment portfolio, it should be kept in mind that many banks, insurance companies and other companies also make available facilities for investment. Arrangements can be made to utilize their large investment research and placement services in any desired mix of bonds, mortgages and common stocks. In addition to, or in conjunction with, the existing investment officer's activity, this may provide additional flexibility.

#### CASH MANAGEMENT

The System receives an average of \$15 million per month in contributions and interest. To obtain the maximum return on the use of this money, investments must be made as quickly as cash becomes available. Cash flow cannot coincide in all cases with the timing of placement of long-term investments or disbursement of benefit payments. In the interim, short-term notes are purchased until the money is needed. Based on current rates, interest income on \$1 million placed for one day is \$135.

#### (a) Loss to System

A recent sampling of the Controller's daily cash balances (November 1966 to March 1967) shows the System carrying an average of \$2.1 million uninvested cash. In contrast, the State Employees' Retirement System, which uses the same investment officers and handles a larger volume of cash flow, attempts to maintain their daily balance under \$100,000. Had the System invested its cash this quickly, it would have realized nearly \$100,000 in additional short-term interest over the past year, based on our sample data.

#### (b) Revised Procedures

Immediate improvements in the procedures could be used to improve the timing of investments.

- 1. The investment accountant would assume the cash management duties borne presently by the Executive Officer.
- 2. The investment accountant would prepare a detailed cash flow forecast for two months in advance, revised twice per week utilizing similar techniques used by S.E.R.S. This would significantly aid both long and short-term investment planning.
- 3. Interest receipts would be obtained no later than 2:30 p.m., from the Treasurer's cashier.
- 4. Depositaries could be established in bank branches in key cities where large county remittances may be sent. The balances in these accounts will be determined by telephone daily and cleared immediately to the Controller.
- 5. Cash received in excess of \$200,000 by the System would be cleared immediately to the Controller. All cash would be cleared prior to each weekend.
- 6. The Controller would be notified  $\underline{\text{in}}$  advance by the investment accountant of the receipts and disbursements that would be posted the following day.
- 7. The investment officer would be notified of the cash available for investment no later than  $3:00\ p.m.$
- 8. At the discretion of the investment officer, short-term purchases may be made for settlement the following day.
- 9. If the approval of the confirmation does not require the signature of the Director of Finance as recommended in Chapter VI, the settlement of the transaction will be expedited without impairing the control over the purchase.

These procedural changes will reduce the present time lag of two and one-half days to one day in maximizing the use of available cash.

#### INVESTMENT ACCOUNTING

Both S. T. R. S. and S. E. R. S. maintain their individual investment records on their own respective data processing equipment. S. E. R. S. is programming its investment accounting applications to improve the information provided and to eliminate a large part of the manual effort now required before a security is added or removed from the records. Many of the securities purchased or sold are identical between the two systems. To a certain extent, the manual work is duplicated in these cases. The investment officers feel the S. E. R. S. reports are more complete, readable and contain fewer errors than the present S. T. R. S. reports.

#### (a) Combined Record

We recommend that S. T. R. S. utilize the faster equipment and improved reporting package of S. E. R. S. for investment accounting. The marginal effort on the part of S. E. R. S. will be minimal as S. T. R. S. s file will simply be an extension of an already existing tape file. This will alleviate time from the present overburdened tabulating equipment and avoid a reprogramming effort for S. T. R. S. when conversion is made to electronic data processing.

#### (b) Simplified Entry

When complete, the S. E. R. S. system for investment accounting will simplify the initial entry of data, as the equipment will calculate the accrued interest and yield. The S. T. R. S. investment accountant will be responsible for coding investment transactions for machine entry. If a combined transaction for both systems is made, the accounting for these should be made by one system

or the other so that duplications of effort are avoided. This can be worked out between the System's respective investment accountants.

#### SUMMARY

The effect of the System's investment policies has been to increase the costs both to members and to the State.

The steps the Board should take to improve the income of the System are:

- 1. Purchasing group annuities from an insurance company.
- 2. Pursuing a plan to invest in mortgage contracts when they are attractive incomewise.
  - 3. Continually re-evaluating corporate equity investments.
- 4. In conjunction with steps (2) and (3), exploring the investment services offered by commercial firms to provide investment services in segregated portfolios.
- 5. Improving the use of presently available cash resources through improved procedures and forecasting.
- 6. Utilizing S. E. R. S. computerized investment accounting programs to reduce expense and provide better portfolio information to investment officers.

#### XV - PROGRAM\_COSTS

The administrative improvement programs presented in this report will require additional outlays for administrative expense. We do not foresee substantial off-setting clerical cost reductions that can be achieved in the immediate future. The total amounts forecast as requirements for our program, however, do not substantially exceed the costs for the program proposal by S.T.R.S. for data processing alone.

While we are recommending the allocation of additional funds for administrative expenses, our recommendations for changes to the fund structure and to investment policies should decrease the State's outlay for members' benefits. A summary of estimated cost increase and reductions is presented in the following paragraphs.

Unforeseen conditions, such as unusual increases in volumes or changes to the law, may arise during the next five years which could influence the the accuracy of our projection. Throughout the implementation program management should continue to revise and update this forecast. It is vital that a reasonable degree of fiscal flexibility be exercised throughout the implementation program.

Furthermore, all additional costs should be recognized as a significant element of the total program. Acceptance of one cost element, and rejection of another could have a significant and possibly an adverse effect on the success of the overall program.

## NEED FOR INCREASED ADMINISTRATIVE COST

The records of the Retirement System are in poor condition; the lack of action or funds necessary to improve the present situation would be a continuation of the present "deferred spending" policy.

In many instances, a delay in getting the proposed program in operation will result in the need for making heavier expenditures in the future. The cost of the program for verifying and recording service prior to 1956, for example, will increase with each major delay. Salary inflation for clerical staff at S.T.R.S. and at the counties, and the impact of payroll records becoming less accessible at the counties will contribute to this cost increase.

The monthly reporting program alone requires a substantial annual increase in the expenditure of funds. However, recording member service and contributions accurately and in a timely manner cannot be achieved by continuation of the present delayed reporting cycle. Dependence of the Retirement System on records retained by counties and by teachers must not be continued. This approach has been unsuccessful in the past, as evidenced by present conditions, and in our opinion, substantial improvements would not be attained by continuing the present procedures. Consequently, the responsibility for collecting, recording, and retaining all data pertinent to member accounts must be assumed by S.T.R.S. in the future.

While cost is a vital factor in evaluating the acceptability of the proposed program, the ultimate objective is to provide an improved level of service to teachers. This is particularly applicable to retiring teachers who are in need of advice and facts when evaluating and selecting the most appropriate retirement plan for their purposes.

Due to a lack of complete service records and availability of rapidly accessible information for each member, the Retirement System has not been able to meet satisfactory standards of service. Without making a major improvement to existing capabilities, which will require additional expenditures, we see little opportunity for achieving substantial improvements in the quality of service provided to members.

## PROJECTED COSTS OF OUR PROPOSED PROGRAM

We have prepared a five-year projection of costs for the proposed program, which is presented as Exhibit M. Our projection was prepared on the following basis:

- 1. The projected costs represent the requirements for <u>additional</u> outlays in excess of the present level of expenditure.
- 2. The projection **does** not include administrative cost increases for additional staff that will be required in the future due to normal growth of activity within the Retirement System.

As indicated by Exhibit M, the proposed program will require an estimated additional expenditure of \$130,000 to \$333,000 annually over the next five years. As indicated previously, we do not foresee substantial off-setting cost reductions during this period. It should be emphasized that the cost associated with the verification personnel should be substantially reduced by 1974. Furthermore, the additional staffing requirements for the Contributions Section should be reduced once the annual reporting schedule has been totally converted to a monthly basis (1973).

## POTENTIAL SAVINGS TO THE STATE AND THE SYSTEM

There are several basic areas within the total program that offer reductions in outlay to the State and S.T.R.S. In some instances, these reductions would not be reflected in the administrative costs of S.T.R.S. The principal areas of anticipated reductions are:

1. The program for purchasing annuities from an insurance company would result in a reduction of State outlay on the order of several million dollars per year, once the purchasing procedure has reached a mature level The amount will depend on the fiscal arrangements made for the use of new money and may be offset by losses on liquidation of securities. We estimate the reduction in butlay of State funds to be about \$1,000,000 in the first year (i.e. by June, 1968), and will grow to approximately \$2,500,000 after all the annuities have been purchased. The reason that the savings will increase gradually is that the annuity purchases should be made with new money (to minimize invest losses) and therefore will take approximately twelve months of elapsed time.

- 2. More effective use of the reserves of the System, as discussed in Chapter IV, Funds Structure, would reduce the outlay of the State by an additional \$1,000,000 to \$3,000,000 annually, depending on the results of the recommended actuarial valuation and study; "i.e., depending upon what portion of the Contingency Fund should be allocated to retired members' reserves.
- 3. Our recommendations for revising investment policy and for permitting more rapid investment of funds will increase income from this source by \$50,000 to \$100,000 per year, depending on the prevailing short-term interest rates.
- 4. In the long-term, monthly reporting and completion of the verifications project will reduce the unit cost of clerical effort per teacher at the County offices. On a statewide basis, this cost reduction resulting from this source could approximate \$300,000 annually.
- 5. Completion of the service verification program will also reduced clerical costs at S.T.R.S. We estimate that this reduction will be about \$100,000 annually after a period of five to eight years.
- 6. We recognize that clerical cost savings can be achieved once the data processing system has been installed. Equally significant, the proposed program establishes a base for processing increasing volumes of activity without requiring proportional increases in the size of the clerical staff.

#### FINANCING ADMINISTRATIVE COSTS

The administrative cost of S.T.R.S. in the 1965-66 fiscal year was \$922,000; member contributions in that year were approximately \$106,000,000; and investment income was approximately \$43,000,000. We have recommended in Chapter III that members who terminate shortly after entry into the System forfeit part of their interest credits and that the amounts forfeited be used as an offset to administrative costs. It would clearly be feasible to supplement the income from interest forfeitures and as a result finance all or a major portion of administrative costs by using either one or a combination of the two following procedures:

- (1) Add a direct surcharge to member contributions.
- (2) Deduct the amount required from investment income.

  If it is decided that such a supplementation is desirable, our recommendation would be that a combination of procedures (1) and (2) be used. The proportion of income from each source could be determined either arbitrarily or by cost

allocation procedures. Procedure (1) directly charges expense to the member. Procedure (2) does so only indirectly and, in order to accomplish its purpose, should be accompanied by a requirement that the amount deducted from investment income should be charged back to members' accounts by means of a reduction in the refund interest rate.

#### SUMMARY

The proposed programs presented in this report offer significant benefits to teachers, counties, S.T.R.S. and the State. Although implementation of these proposals will increase administrative costs, significant savings to the State and the Retirement System can be achieved. In our opinion, these programs must be adopted to meet the future requirements of a growing System and can be justified on the basis of improved service, more efficient operations and by reducing the State's annual outlay.

#### XVI - INSTALLATION

The recommendations in this report deeply affect the Law and administration of this System. In planning for the implementation, certain key phases of the program will take at least five years to complete. The interrelationship of tasks and the capacity of this System preclude the possibility of acceleration. The major programs of the proposed plan are a part of a total program and must be implemented in their entirety if the projected benefits are to be realized.

#### MAJOR PROGRAMS

Six major programs must be conducted simultaneously in order to accomplish all that needs to be done within these five years:

- 1. Organization Plans and programs, changes to division structure, external relations program, training, documentation and office layout.
  - 2. Actuarial Study Data updating, analysis, and recommendations.
  - 3. Law Rewriting of law and legislative approval.
- 4. <u>Data Processing</u> Equipment finalization, design and programming, training and testing, documentation and conversion.
- 5. <u>Clerical Systems</u> Member records, work simplification, verification, controls and forms revision.
- 6. <u>Financial</u> Investments, funds structure, accounting records and reporting.

#### SCHEDULE OF IMPLEMENTATION

The chart in Exhibit N portrays the phases and timing of the six major programs. These schedules are an initial attempt to portray the magnitude of the task facing the System. They are not intended to depict firm installation dates, but to act as a starting point to establish schedules once the final recommendations have been agreed upon.

#### INSTALLATION RESPONSIBILITY

The installation schedules as depicted in Exhibit N present the System's

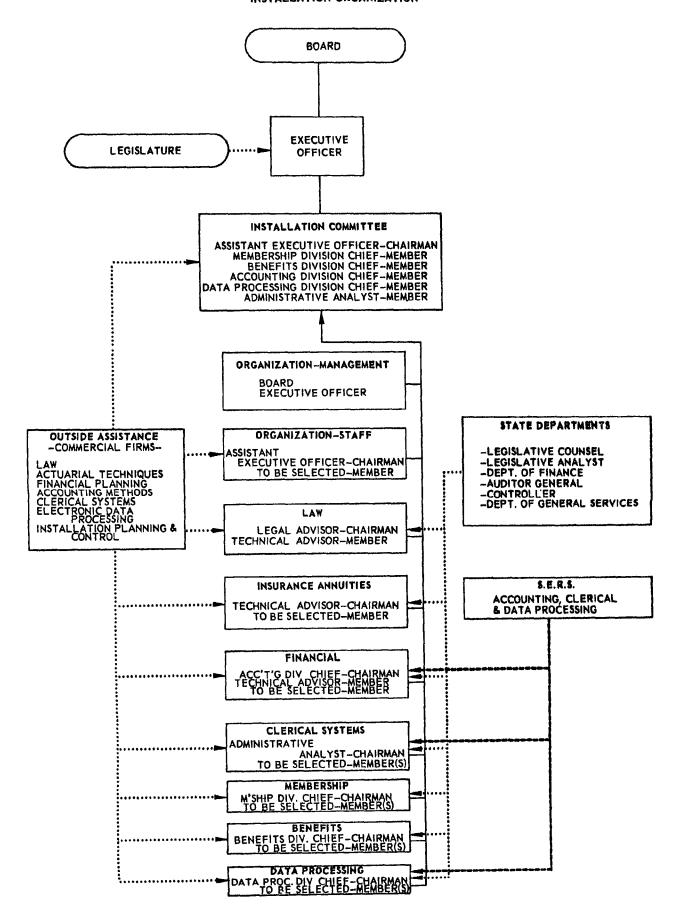
management with a major task which must be accomplished in addition to their normal daily operational duties.

The first two years of implementation will require a concerted effort by all concerned, management and staff, as during this period the largest number of concurrent programs will be scheduled. We feel that one person, who is competent and experienced in an installation of this magnitude and complexity, should be charged with the total responsibility of the program and it should be his major activity. The person selected should be a senior administrator with the title of Assistant Executive Officer and should report to the Executive Officer, who ultimately must be responsible to the Board and the Legislature.

The main duties of the Assistant Executive Officer will be to control and coordinate the various projects being undertaken. It cannot be expected that the Assistant Executive Officer be technically competent in all the areas which are affected by the change but he must have proven administrative ability and be given the total responsibility and authority to make decisions affecting staff, individual policies and administrative procedures within the boundaries of the program.

The Assistant Executive Officer will be the Chairman of an Installation Committee which will consist of the four major division chiefs, namely Membership, Benefits, Accounting and Data Processing and the Administrative Analyst. Operation subcommittees comprised of members associated with the System will be formed and be responsible for the implementation of specific projects within the program. Technical assistance from State departments, S. E. R. S. and commercial firms should provide specialized knowledge in the field of organization, law, actuarial techniques, financial planning, accounting methods, clerical systems, electronic data processing and installation planning and control. We believe that this assistance is necessary as the present System staff do not have sufficient background and experience in these areas.

### STATE TEACHERS' RETIREMENT SYSTEM INSTALLATION ORGANIZATION



The experience gained by S. E. R. S. could be beneficially used by the System. The Executive Officer of S. E. R. S. should be requested to permit his Accounting Division Chief to provide technical assistance to the Assistant Executive Officer as and when required. The S. E. R. S. should assume the responsibility for processing S. T. R. S. investment bond records and reports. They should also be requested to provide assistance in converting the System's retirement rolls to tape until the computer facilities are available at S. T. R. S.

The facing page illustrates the division of responsibilities and the interrelationship of the subcommittees and outside technical assistance.

For each of the projects, the subcommittee chairmen must prepare a detailed step by step plan for action, with milestone schedule dates. This plan must be agreed upon by the Installation Committee, who will use the plan to review and report progress to the Executive Officer, the Board and the Legislature.

STATISTICAL DATA SHOWING INDEXES OF AVERAGE ANNUAL SALARIES OF PUBLIC SCHOOL TEACHERS, IN THE PACIFIC REGION, IN CITIES OF 50,000 INHABITANTS OR MORE

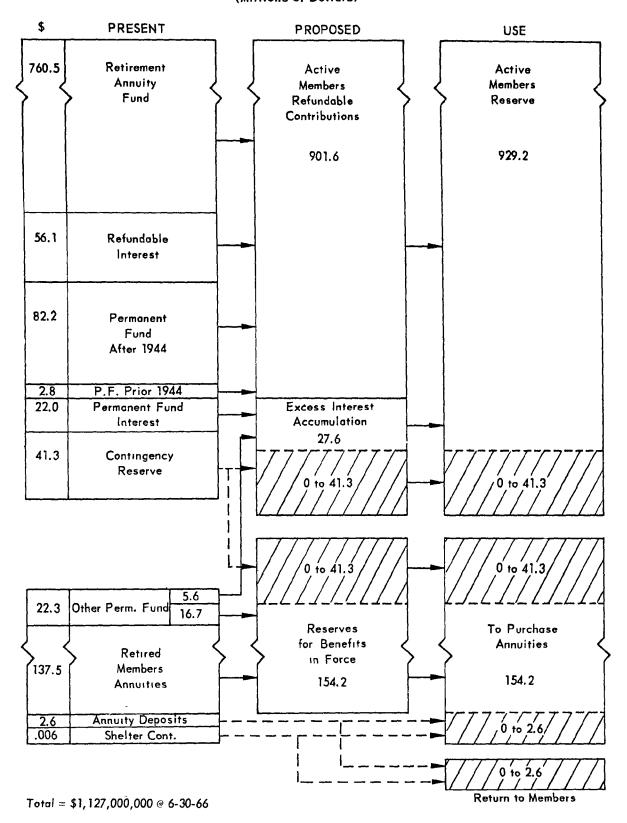
Exhibit A

School Year Ending in June	Index (1957-59 = 100)	Percentage Increase in Index	Compounded Cumulative Percentage Increase since 1945
1945	46		
1947	53	15.2%	15 - 2%
1949	67	26.4	45.7
1951	70	4.5	52.2
1953	80	14.3	73.9
1955	86	7.5	87.0
1957	95	10.5	106.5
1959	105	10.5	128.3
1961	116	10.5	152 , 2
1963	124	6.9	169.6
1965	133	7.3	189.1

The corresponding level rate of increase is determined by using the following formula:  $(1 + r)^{20} - 1 = 189.1\%$  or  $(1 + r)^{20} = 2.891$  or  $r = 5\frac{1}{2}\%$  approximately.

## STATE TEACHERS' RETIREMENT SYSTEM PLAN FOR REALLOCATION OF RESERVES (Millions of Dollars)

EXHIBIT B



Note: 1. ALTERNATIVE ALLOCATIONS

- 2. Insignificant and all related interest reserves not detailed.
- 3. Amounts not adjusted for allocation of 1966 contributions yet to be made.

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#### POSITION DESCRIPTION

#### Executive Officer

#### Reporting Relationships

Reports to the Teachers' Retirement Board. Supervises all System Staff Management and the Systems assistant executive officer.

#### Responsibilities

- 1. Overall administration of the System, including:
  - (a) Operations and Procedures Through the assistant executive officer, the efficient operations of maintaining, collecting and processing membership record data and benefits.
  - (b) External Relations The establishment and the conduct of an effective program for improving communications with the membership and counties.
  - (c) Administration of the Law With technical assistance the consistent development of documented administrative decisions affecting member records and benefits.
  - (d) Financial and Actuarial Reporting Providing the board, the State, the public and the membership with financial and actuarial information on the status and progress of the System.
  - (e) Board Relations Keeping the board fully aware of the administrative progress as well as other matters relating to the operations and benefits provided by the System.
  - (f) Investments The informed review and approval of investment recommendations in cooperation with the investment officers.
- 2. Management Development In order that duties and responsibilities can be effectively delegated, the development within System Management of the necessary skills and technical knowledge.
- 3. Program Planning The establishment of long-range objectives, projections and plans for the overall administration of the System.

- 4. Coordination with S.E.R.S. Continual liaison to administer the joint investment and investment accounting programs, the data processing services needed of S.T.R.S. and the exploration of other future areas of common cooperation.
- 5. Respresentation of the System To represent the System before the Legislature, the various departments within the State administration, representatives of the public, and teacher organizations. To see that necessary data is available to interpret adequately the financial and administrative impact of proposed changes to the retirement law.

#### Qualifications

- 1. Proven results as an effective organization administrator.
- 2. Ability to communicate at all levels of operation.
- 3. An understanding of actuarial techniques and practices.
- 4. Experience in the analysis and interpretation of financial and statistical information.
- 5. Ability to comprehend and interpret the law.
- 6. Ability to plan and schedule a complex multiphase program.
- 7. A basic understanding of data processing applications and concepts and awareness of continuing progress and possibilities for their use
- 8. An understanding of investment principles and their relation to the current market situation.

Exhibit D

#### POSITION DESCRIPTION

#### Assistant Executive Officer

#### Reporting Relationships

Reports to the Executive Officer. Supervises all Division Management and the Administrative Analyst.

#### Responsibilities

- 1. Operations To be responsible through division managers for the daily operation of all divisions of the System including:
  - (a) Operational Plans Establishing plans, schedules and deadlines for all major operating programs.
  - (b) Enforcement The enforcement of the performance of the plans and the reporting thereof to the executive officer.
  - (c) Coordination To resolve all operations problems where more than one division is involved and to coordinate the use of staff between divisions for a balanced workload.
  - (d) Approval To review and approve major expenditures for salaries, equipment and supplies within the System's operating budget.
- 2. Installation Committee To serve as chairman.
- 3. Documentation and Training The establishment of a formal system-wide procedures documentation and training program at all operating levels.
- 4. Administrative Policies To carry out routine interpretations of the law consistent with directives established and to refer those matters requiring technical interpretation or action.
- 5. Special Studies The performance of special studies for the provision of necessary data as requested by the executive officer or other members of the System's technical staff.
- 6. Reporting To provide timely, accurate, and meaningful financial and operations reporting.

#### Qualifications

- 1. Proven record of administrative and supervisory skills.
- 2. Technical understanding of clerical, accounting and data processing procedures and techniques.

- 3. Ability to supervise and direct a data processing and clerical staff of nearly 100 people.
- 4. Ability to plan and organize the programs for their most efficient execution.

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# STATE TEACHERS' RETIREMENT SYSTEM Summary of Present Data Processing Applications Fiscal Year 1965 - 66

Applic	ation (by job Number)	Regular Hours	Overtime Hours	Total <u>Hours</u>
001	Allowance Roll	555.9	106.9	662.8
002	Retire Ledger	15.1	100.3	15.1
003	Arrears	7.2		7.2
004	Affidavits	40 46	11.7	52.3
005	Insurance	95.1	16.2	111.3
006	One-half Continuance	19.7	.8	20.5
007	Accounts Receivable	392.9	45.9	438.8
008	Address File	170.5	22.0	192.5
009	Closeouts	325.8	.8	326.6
010	Deaths	76.0		76.0
011	County Remittances	11.1		11.1
012	Bonds	69.3	24.0	93.3
013	Estimated Roll	48.5	.8	49.3
014	Balance File Adjustments	62.9	.6	63.5
015	Refunds	386.2	42.6	428.8
016	Retirement Cancellations	6.9		6.9
017	Contributions	2,477.0	459.3	2,936.3
018	Procedures	92.3	5.2	97.5
019	Cleared Transactions	99.1	2.3	101.4
020	Active Statistical Cards	1,325.7	256.0	1,581.7
021	CD 51	8.7		8.7
022	Hold Dependents	2.9	,	2.9
023	File Maintenance	148.1	13.3	161.4
024	File Balance	2.1		2.1
025	Final Payment	20.7		20.7
095	Connections	224.4	11.5	235.9
096	Time Cards	76.1	3.1	79.2
097	Testing	86.6	15.8	102.4
099	Down Time	836.5		836.5
103	Active Retire Stats	27.2		27.2
104	Conversion to SSA	35.5	9.6	45.1
200	Posting	401.1	820.2	1,221.3
204	2-04 File	25.3	9.5	34.8
	Total	8,173.0	1,878.1	10,051.1

# STATE TEACHERS' RETIREMENT SYSTEM Summary of Equipment Utilization by Machine Fiscal Year 1965 - 66

<u>E</u> c	guipment	Regular Hours	Overtime Hours	Total <u>Hours</u>
024-1	Keypunch	64.2		64.2
024-2	Keypunch	1,165.1	12.9	1,178.0
024-3	Keypunch	820.4	18.1	838.5
056-1	Verifier	560.7	7.7	568.4
056-2	Verifier	903.2	22.1	925.3
082	Sorter	782.0	251.3	1,033.3
085-1	Collator	697.1	215.3	912.4
085-2	Collator	543.3	132.0	675.3
408	Tabulator	1,129.0	383.0	1,512.0
514	Reproducer	372.8	227.1	599.9
523	Punch	263.3	200.1	463.4
552	Interpreter	334.7	172.0	506.7
602/604	Calculator	537.2	236.5	<u>773.7</u>
	Total Equipment Hours	8,173.0	1,878.1	10,051.1

#### Present Data Processing Equipment and Personnel Costs

Equi	pment				Annual Cost	
024	Keypunch		\$		564	
029	Keypunch				828	
056	Verifier			1	,200	
082	Sorter (owned)				-	
085	Collator			3	,420	
408	Tabulator			13	,410	
514	Reproducer (owned)				-	
523	Summary Punch (owned)				-	
552	Interpreter (owned)				-	
604	Calculator		=	3	,540	
	Total Annual Equipment Cost					\$22,962
Pers	onnel (including Benefits at 10%)					
0per	rations	(6)	\$	45	,000	
Кеур	ounch	(4)	=	22	,000	
	Total Annual Personnel Cost					\$67,000
	Total Annual Equipment and Person	nel Costs				\$89,962

#### Data Processing Equipment Costs - STRS Proposed Configuration

Mach <u>Numb</u>		Description		onthly ental
2030 3237 4427 4760 6960 7520 7915		Central Processing Unit Decimal Arithmetic Floating Point Arithmetic Interval Timer Selector Channel Storage Protection 1051 Console Attachment	\$	3,875 25 50 50 215 150 75
1051 3130 4410 4411		Typewriter Control Unit CPU Attachment 1st Punch Attachment 1st Reader Attachment	\$	60 10 5 10
1052		Printer Keyboard	\$	65
1442 1532		Card Read Punch Card Image	\$	525 30
2821		Printer Control Unit	\$	600
1403		Printer	\$	775
2841 8079		Storage Control Unit 2321 Attachment	\$	525 175
2311 1316		Disk Storage Drive Disk Packs	\$	1,150 60
2321		Data Cell Drive	\$	2,800
2415 3328 7125		Tape Drives Data Conversion 7-Track Compatibility	\$	750 45 50
2848 3357 3857 5340 5341 7928		Display Control Display Adapter Expansion Unit Non-Destruct, Cursor Ctl. Non-Destructive Cursor 1053 Adapter	\$	420 200 45 10 5 40
2260 4766		Display Stations Alphameric Keyboard	\$	120 80
1053		Printer	\$_	50
	Total Monthly C	Computer Equipment Rental Cost	\$	13,045

#### Data Processing Personnel Costs - STRS Proposed Program

Position	Projected Annual Salary 1970-71
Data Processing Manager	\$13,872
Associate Data Processing Systems Analyst	11,988
EDP Supervisor	12,588
EDP Supervisor	11,988
Programmer II	10,356
Programmer II	9,876
Programmer II	9,876
Programmer II	9,876
Programmer I	8,124
Programmer I	8,124
Computer Operations Supervisor II	10,356
Senior Computer Operator	7,827
Senior Computer Operator	7,761
Computer Operator	6,768
Computer Operator	6,712
Computer Operator	6,712
Senior Tabulating Machine Operator	7,020
Senior Tabulating Machine Operator	6,441
Tabulating Machine Operator	6,360
Keypunch Supervisor I	6,216
Keypunch Operator	5,628
Keypunch Operator	5,628
Keypunch Operator	5,452
Keypunch Operator	5,386
Keypunch Operator	5,386
Intermediate Typist	5,232
Total Salaries	\$211,553
Employee Benefits - 10%	21,155
Total Annual Personnel Costs	\$232,708

STATE TEACHERS' RETIREMENT SYSTEM

Projected Membership Data - 1967 to 1975

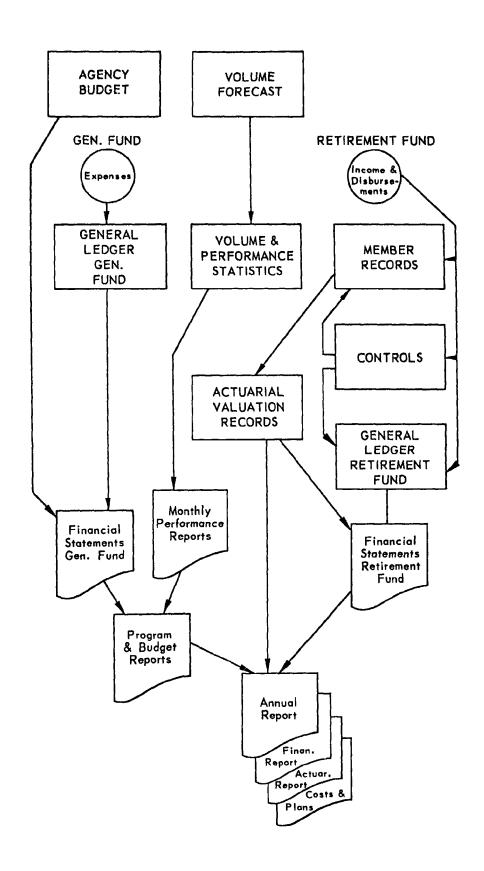
	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75
Active Membership	338,000	358,000	379,000	402,000	426,000	452,000	479,000	508,000	538,000
Member Terminations:									
Deaths (Active)	520	570	630	069	160	840	920	1,020	1,120
Refunds	9,730	10,200	10,700	11,200	11,800	12,400	13,000	13,700	14,400
Retirements	2,550	2,780	3,030	3,300	3,600	3,925	4,275	4,660	5,080
Net Active Membership	325,200	344,450	364,640	386,810	409,840	434,835	460,805	488,620	517,400
Retired Roll:									
Deaths and Reinstatements	009	099	730	800	880	940	1,060	1,230	1,350
Net Retired Roll	32,900	35,020	37,320	39,820	42,540	45,495	48,710	52,140	55,870
Total Active and Retired Membership	358,100	379,470	401,960	426,630	452,380	480,330	509,515	540,760	573,270

#### Exhibit K

#### STATE TEACHERS' RETIREMENT SYSTEM

#### Projected Data Processing Personnel Requirements

Manager	(1)	\$13,872
Data Processing Systems Analyst	(1)	11,988
EDP Supervisor	(1)	12,588
Programmer II	(3)	32,230
Programmer I	(2)	16,248
Computer Operations Supervisor	(1)	10,356
Computer Operators	(3)	22,356
Tabulating Operators	(1)	7,020
Keypunch Supervisor	(1)	6,216
Keypunch Operators	(5)	27,480
Intermediate Typist	(1)	5,232
Total Annual Salaries	(20)	\$165,586
Employee Benefits (10%)		16,558
Total Annual Personnel Costs		\$182,144



#### Projected Cost Increases - Proposed Improvement Program

#### (Expanded from Existing Staff Levels)

Description	د	<u>1967-68</u>		<u> 1968-69</u>		<u> 1969-70</u>		<u> 1970-71</u>		1971-72
<u>Organization</u>										
Management Positions										
Division Chief External Relations Officer Field Representative Verifications Section	\$	15,000 14,000 12,000		15,000 14,000 12,000		16,000 15,000 13,000		16,000 15,000 13,000		17,000 16,000 13,000
Supervisor		12,000		12,000		13,000		13,000		14.000
Data Processing Positions										
EDP Systems Analyst Programmer Keypunch Operators		11,000 8,000		11,000 16,000	(2)		(2)	12,000 18,000 16,000		
Clerical Positions										
Verifications Staff Roster File Operation File Control and Assembly Contributions Section	(2)	11,000	(2)	11,000	(2) (2)	12,000 12,000	(2) (2)	33,000 12,000 12,000 48,000	(2) (2)	13,000 12,000
Data Processing Installation										
Equipment										
Computer System Tabulating Equipment Reduction (Present Equipment) Conversion Costs	)					130,000 5,000 (20,000)		130,000 5,000 (25,000)		150,000 5,000 (25,000)
File Purification Freight Site Preparation Office Equipment Computer Test Time Travel Miscellaneous		20,000		20,000 5,000 5,000 3,000 4,000 4,000 15,000		5,000				
Total Additional Program Costs	\$	130,000		188,000		291,000		318,000		333,000

STATE TEACHERS' RETIREMENT SYSTEM INSTALLATION SCHEDULE

