

**A Biography of H. G. Osborne, P.E.**  
***Based Upon the personal recollections of Carl R. Nelson, P.E.***  
***And an Oral History recorded by Lisa Vandorpe, P.E. in 1996***

## **Forword**

In 1996 the American Society of Civil Engineers History and Heritage Committee initiated an Oral History project for H. G. Osborne. Better known as George, he was interviewed by Lisa Vandorpe, a young member of ASCE to document Osborne's highly renowned engineering career. The recorded question and answer interview has been refined as a third person narrative by Carl Nelson. Carl, as an entry level engineer, first met Osborne during a flood control office Christmas Party in December of 1960. Within County office circles Osborne was known as "HGO". Seated at his desk in the modest, linoleum-floored office (of the former St. Ann's Inn), HGO was enjoying a cigar, while staffers somewhat reticently accepted his invitation for a politically incorrect libation. Among his ex-Navy pals, and the Orange County Engineers Club he was popularly known as "the Gray Fox". The narrative that follows reflects Nelson's recollections of a working friendship of nearly 40 years.

George was appointed by the Orange County Board of Supervisors to the position of Chief Engineer of the Orange County Flood Control District (OCFCD) in 1955. He was known as a disciplined engineer, a demanding mentor, and a politically astute administrator. As Chief Engineer, he spearheaded the successful 1956 flood control bond election, a \$43 million financing program. This bond issue was the financial backbone under which the countywide system of flood control channels was constructed. Implementation of the program allowed residential and commercial development of otherwise flood-prone areas of Orange County.

In 1974 Osborne was selected by the Board of Supervisors as the first Director of the new Environmental Management Agency (EMA) which consolidated the former departments of Planning, Building, Flood Control, Roads, Surveyor, Solid Waste, Water Pollution, Harbors, Beaches and Parks into a single unit of management reporting directly to the Board. George retired from the County in 1980, but was never inactive during his retirement. He served from 1981 to 1999 as Executive Director of the Santa Ana River Flood Protection Agency (a consortium of public agencies dedicated to securing political support for completion of the Army Corps of Engineers Santa Ana River Mainstem Project as authorized by the Congress in 1988). He was appointed to the Orange County Planning Commission by the third district supervisor and eventually served as commission Chairman. Later he was appointed to the Board of Directors of the Orange County Water District (OCWD) representing the City of Fullerton. Eventually, he served as the OCWD's Chairman.

## **Biography**

Herbert George Osborne, was born in Canada in 1915. His father, born in England, was a professional surveyor, had worked on the Panama Canal for seven years. He worked

on a railroad construction job in Vancouver, British Columbia before moving the Osborne family to Orange County around 1920. George attended Ford Elementary School (grades 1 through 6) in the City of Fullerton, then Wilshire School (grades 7 & 8) and graduated from Fullerton Union High School. His father instilled in him an interest in land development, surveying and engineering.

As a depression era high school graduate, George worked at various jobs, eventually finding the means for a college education, he graduated as a Civil Engineer from Caltech in 1942. He served three years in the U.S. Navy on destroyer escort in the Pacific during World War II. He later retired from the Naval Reserve with rank of Commander. After the war, he worked for the Southern California Water Company before joining the Orange County Flood Control District in 1950. This was as Orange County was emerging from a half century of agricultural prominence.

HGO acknowledges that he was hired then not for his knowledge of flood control, but of the water industry. The OCFCD had been active in Orange County's water conservation efforts since 1927. Because the 1949 water year was one of the driest on record in Orange County, he was hired to engage in a project which would later be unthinkable due to environmental habitat concerns. The project was to dry up the wetlands behind Prado Dam and salvage water that otherwise would be lost to the dense, natural vegetation of the reservoir bottomlands. Wells were proposed that would lower the groundwater table and get rid of the plants which lose water into the air by transpiration. It was estimated that about 8 thousand acre-feet of water could be conserved and sent downstream through Prado Dam to existing irrigation canals of the Anaheim Union Water Company and the Santa Ana Valley Irrigation Company. An excellent report was prepared showing it would be feasible to install dewatering wells and a pipeline for water delivery. However, upstream water interests were alarmed that the water salvage Project would impair their water rights. After years of meetings and threats of litigation, the project was dropped.

The Orange County Water District (OCWD) had been formed in 1933 (with the instigation of the Irvine Ranch Company) for the specific purpose of providing a tax base for pursuing litigation against upstream water users (termed adverse appropriators). OCWD intervened in the Irvine Company's lawsuits and prevailed in court. However, groundwater levels in Orange County continued to drop and there was talk of adjudicating the basin water rights. In lieu of that, the Orange County Water District Act was modified in 1953 to permit the establishment of what was called the "Pump Tax". This allowed the OCWD to collect (from each water well owner in Orange County) a fee for each acre-foot of water drawn from the pumps. The funds collected would be used to maintain the county's water supply by purchasing imported water from The Metropolitan Water District for artificial recharge of the underground basin. At that time the OCFCD dropped out of the water supply business and Osborne's attention was diverted to planning for the big housing boom that was just beginning.

The Santa Ana River had wreaked devastation upon central Orange County in the flood of 1916. Then, a 1925 report to the Board of Supervisors had revealed that water well

pumping exceeded natural replenishment from Santa Ana Canyon. Osborne's oral history relates the evolution of the OCFCD after its creation by the State Legislature in 1927. A bond election in 1929 proposed constructing dams on several orange county streams to reduce floods, including the Santa Ana River near the farming community known as Rincon or Prado in Riverside County. The election failed by several hundred votes by reason of concerns that the dam at Prado might impair Orange County's rights to continuity of surface flow in the lower Santa Ana River. Since there was no other major source of irrigation water and groundwater basin replenishment, there was fear that upstream users could access water retained by the dam and reservoir.

Following failure of the 1929 bond issue (a form of borrowing based upon future tax revenues) not much flood control work could be done due to a lack of money. The legislature had authorized the district to levy a maximum tax rate of ten cents per \$100 assessed property value which yielded only half a million dollars annually during the depression years of the '30s. Much more was needed for any significant construction, but little public interest was expressed during a period absent any flooding.

Under the famous "New Deal" administration of the early 1930s the Congress authorized federal studies for the work formerly proposed by the 1929 Bond Issue, but no construction funds had been appropriated by the time of the devastating 1938 flood. Within months, the Army Corps of Engineers completed engineering for 3 of the Orange County dams and by 1941 the Corps had completed the Santa Ana River Dam at Prado, the Fullerton Creek Dam and the Brea Creek Dam. A fourth federal dam at Carbon Canyon was stimulated by the widespread flooding of central Anaheim by relatively small floods in 1952 and 1956. Carbon Canyon Dam was completed by the Corps in 1960.

After the flood district's water supply work cited above was concluded, Osborne's flood control planning and design work began. 1952 was a year of excessive rainfall and large areas of farmland had been inundated before many houses existed along the unimproved streams. By then the flood control district had accumulated about \$1 million in unspent tax revenue, but the Chief Flood Control Engineer Jack Bradley said the Board of Supervisors had been undecided about which projects might be constructed. One of the members of the Board owned an orange grove in Placentia that had been flooded; accordingly Bradley resigned effective January 1953. Bradley's assistant, P.H. Budd was appointed Chief Engineer and Osborne became the Assistant Chief Engineer. Budd had been there many years, one of the lucky fellows who had a job during the depression.

Osborne relates that the Board of Supervisors at that time had what was known as a "Committee System" for management. Each member of the Board had a number of assigned activities and the rest of the Board would look to the one person "Committee" for direction. Mr. Willis Warner was Chairman of the Board and, incidentally, the Flood Control Committee man. An interesting experience occurred for Assistant Chief Engineer Osborne when he was asked to report to Mr. Warner in person during an absence of the Chief Engineer. He'd heard from his boss that Warner was a negative

person and didn't want to do anything. It was budget time and Warner looked at Osborne's proposed five projects that would use up the available million dollars in five different problem areas of the county. Warner looked at the projects and said "good, let's go!" This was a different story than Osborne had previously heard about Warner. Warner followed through, nonetheless, and Osborne's projects were budgeted by the Board unanimously.

Despite previous opposition toward bonded indebtedness, there was also great pressure from development pouring over from Los Angeles and subdividers wanting to put in new homes without provision for flood control. The Orange County Grand Jury investigated and reported that something should be done. In 1954 the Board authorized a consultant study to be rendered, and in 1955 the Board further authorized preparation of an "Engineers Report" that would be used for purposes of a bond election. The report was signed by the consultants, Harrison & Wooley and addressed directly to the Board of Supervisors. The report conceived a number of projects totaling \$42,620,000. The Board didn't act right away on the filed report. That was a lot of money in 1955.

Before acting, the Board sent the Engineers Report out to all the cities and asked for endorsements. Some of the cities endorsed the proposal but one, Laguna Beach (a city that had one of the worst flood problems in the county), not only didn't endorse it, they passed a resolution condemning it and sent their resolution to all the other cities. Osborne says that he never did understand the city of Laguna Beach in all the years that he dealt with them. Incidentally, P.H. Budd passed away during the year and Osborne was selected by the Board to replace Budd as Chief Engineer.

The board finally adopted a resolution setting the Bond Election for June of 1956, but did nothing else to support it. The law prohibits the expenditure of public funds to promote the issue of bonds. Immediately there was opposition from the Santa Ana Register, the Irvine Company, and the Orange County Farm Bureau. According to Osborne the Irvine Company was concerned that the amount was too large and wasn't needed because they had coped with floods on their ranch by building small ditches alongside County roads and that took care of it. Well, said Osborne, that's fine for farms, but not for residential subdivisions. The Farm Bureau condemned the issue because the Engineers Report did not propose ditches along roads, but big channels would be built diagonally across farmland. Again Osborne says that doesn't work if you're going to subdivide for housing. And, of course the Santa Ana Register is usually against government of any kind.

There were no big flyers, or newspaper articles, no debates on the issue until the last couple of weeks before the election when some billboards appeared favoring the issue. Osborne doesn't know who sponsored the billboards, but he and the Board had nothing to do with it. On election day the newspapers were actively totaling the votes and announced in advance the election had failed. However, they had missed a whole page of yes votes from Santa Ana which when added carried the total to the necessary 2/3rds yes vote. On analysis it turned out that various parts of the county were dissimilar; some heavily against, others heavily in favor...just enough to pass.

Now, the district could proceed; the first bonds were sold in February of 1957 and work started in earnest. There was some question about how to prosecute the work; with private engineering firms or by hiring internal staff. Under pressure from the private sector, a compromise was accepted whereby half the work would be inside and half let to private firms. Management and construction inspection would be by flood control district staff and construction would be in accord with state law for bidding by private construction contractors using plans prepared by private engineers, but approved by district's Chief Engineer. A sore spot involved the money allocated by the consultants who prepared the Engineers Report. They had not been realistic on their cost estimates; consequently there was rarely enough money for the intended work. County lawyers advised that the work must be done in accordance with the Engineers Report, and if there wasn't enough money to do a whole project, then to do as much as possible. The most under-estimated part was the cost of land and easements in the face of land development pressures.

Mr. Harrison, co-author of the Engineers Report, was a fine gentleman who had worked for the Corps of Engineers on the Prado Dam construction, so he had some very solid qualifications. His partner on the report had worked for Osborne's father at one time and the father described Wooley as a promoter who talked more about politics than engineering. It was learned later that the Engineers Report work had been divided among them. As it turned out, Wooley's part was wilder on the cost estimates, much less accurate than Harrison's.

An interesting heritage in the 1955 Engineers Report is that it set out the criteria for design of the facilities. The main channels were to be designed for a 25 year flood, but constructed of graded earth; hence capacity for only 2/3rds capacity. The idea was that when money was available for concrete lining, the capacity would increase to 100%. Bridges would have 100 % of 25 year capacity. This established the long-term criteria of the OCFCD. That was fine, until the federal Flood Insurance Program came along in 1971, establishing a national criteria for 100 year flood protection for which the OCFCD is even now trying to upgrade it's facilities.

As the OCFCD bond funds were spent out, legislation was passed that would increase the maximum tax rate to 20 cents per \$100 assessed value. With the growth of development and increase of total property values, the annual money for flood control increased considerably, and a sizable construction program continued into the 1960s for completion of the 1956 bond projects and to extend channel improvements where needed. By 1962 it was recognized the former bond program wasn't going to take care of all Orange County's flood control needs. While other counties such as Los Angeles and San Bernardino had been getting federal construction financing to supplement their locally funded works, the question was raised; why shouldn't Orange County ask for federal help? Actually, until the post-war building boom, Orange County's elected officials, especially the conservative Congressman James Utt had not been particularly enthusiastic about federal financing. They just didn't like the idea of income taxes

collected locally, sent back to Washington and apportioned back, and having bureaucrats telling Orange County how to do the job.

The federal program is implemented by the Army Corps of Engineers if and when the Congress authorizes it. The Corps doesn't promote projects it only responds after local agencies request help through the Congress. For instance the last federal project in Orange County had been the Carbon Canyon Dam, requested and authorized in the 1930s but delayed until after World War II.

In 1962 George consulted with his "Committee Man", Mr. Warner, to see if the Board of Supervisors might be interested to make an inquiry for federal help. Mr. Warner agreed, Osborne then requested the board to adopt a resolution asking the Congress to authorize a re-evaluation of the former (1930s) Orange County Federal Project under which Prado Dam had been built. The adopted resolution went to Congressman Utt, and the Congress in 1964 authorized the requested re-study.

This went on until 1966 when another bond issue was proposed to accelerate construction in keeping with pace of the county's development. A new Engineers Report was prepared, this time by in-house engineers for a proposed \$46 million construction program. The concept was a reduction of the tax rate, while accelerating the pace of new construction, but extending the payout to include future beneficiaries. The election received only 66.2% yes vote, close nonetheless a failed election.

During the two consecutive "30-year floods" of January and February 1969, the partially completed flood control system functioned with minimal overflow to recently developed areas of the County; however, internal erosion of unlined channels showed up the countywide need for accelerated construction of improvements. Accordingly, the Board of Supervisors continued to levy the statutory 20 cent maximum tax rate. Much was accomplished (on a "pay-as-you-go" basis) as the increasing assessed values yielded a steadily increasing budget for OCFCD. This continued until 1978 when the statewide Proposition 13 referendum limited the taxing power of the Board of Supervisors to a total of 1% of the County's assessed valuation. This reduced total revenue to the County and the Board then pooled the resources and re-apportioned funds subjectively to all the County agencies dependent upon property tax revenues.

In the meanwhile, the Corps studies (and Congressional funding) had expanded to include the entire Santa Ana Basin, including San Bernardino and Riverside Counties. By 1970-71 the Corps had determined that Prado Dam, which they built in 1941, was not large enough to handle runoff from the rapidly urbanizing upstream watershed. A one hundred year flood would result in uncontrolled spillway flow, inundating large areas of Orange County below Prado. With that information, the Corps narrowed their focus to the Santa Ana River setting aside study of the smaller Orange County streams.

By 1975, the Corps Los Angeles District Engineer completed a Survey Report showing several alternatives for remedy of the Santa Ana River problems. One alternative would be simply enlarging the floodway from Prado to the ocean through central Orange

County. Another would be a very big expansion of Prado Dam and Reservoir large enough to limit downstream flow to the capacity of the lower Santa Ana River channel. Any of the alternatives would require taking land off the tax rolls and there was some concern that Orange County would receive the biggest benefit while Riverside and San Bernardino would be stuck with facilities to maintain.

To overcome upstream opposition, Osborne at one time thought there would be needed a joint powers arrangement with the upstream counties a very probably difficult political feat. Then, Ed Just, a retired councilman from Fountain Valley approached him expressing interest in doing something to stop the threat of Santa Ana River flooding. Together Osborne and Just collaborated on the formation of a joint powers agency which would have the large and growing political strength of all the affected public agencies of Orange County. From that idea, in 1975 the Santa Ana River Flood Protection Agency (SARFPA) was formed, including the OCFCD, the Orange County Sanitation District (OCSD), the OCWD, and most of the cities in the flood plain. The agency commission includes a representative of each member agency. The agency has no other purpose than lobbying for Congressional approval of the Santa Ana River project.

Eventually after review of cost/benefit analyses the Corps recommended a three-part alternative; 1) a dam in the San Bernardino Mountains to reduce peak flows through San Bernardino and Riverside, 2) an increase in the size of Prado and 3) increasing the lower Santa Ana River capacity. The environmental review was completed in 1986 and the three county alternative; named The Santa Ana River Mainstem Project was authorized by Congress in 1988.

The Corps studies had satisfied the relatively minor protests of project opponents by including certain side channel improvements and the mitigation of environmental impacts. Although design engineering could begin, there remained the task of persuading Congress to annual appropriations for what was now termed "the largest flood threat in the United States west of the Mississippi". The \$1.4 Billion authorization requires not only the support of Orange County, but also the upriver counties congressmen with whom SARFPA has been effective in lobbying. In 1981, after Osborne retired from the County, Ed Just passed away and Osborne was appointed SARFPA's executive director. Although George had a loose consulting arrangement with a developer at the time, the Santa Ana River was more dear to his heart, not the engineering, but promoting the project. In 1994, George resigned as executive director, but then became OCWD's representative on the SARFPA Commission, after which the commission selected Don Martinson, an old flood control man as executive director.

Another event that occurred was resignation of the County Planning Director in 1973. Having for many years been the flood control advisor to the Planning Commission, Osborne was appointed Interim Planning Director (concurrent with his role as Chief Engineer of OCFCD) while the County Administrative Office studied reorganization of County functions governed by the Board of Supervisors. What emerged was what has been called the "super agency". Osborne relates that some departments and/or

department heads were not perceived as robust as others. It was thought that putting some of them together under unified leadership might be desirable from the Board's point of view. Thus was established the Environment Management Agency (EMA), combining (under the new Director, George Osborne) the former units of planning, building, flood control, roads, harbors, beaches, parks, solid waste and water pollution. Vandorpe's inquiry with Osborne did not dwell on details of the organization, but suffice to say it was adopted successfully by the Board of Supervisors in 1974.

One of the early challenges faced by Osborne as the Interim planning Director (in 1973-4) was land developers who wanted to file a very extensive plan for subdivision of Moulton Ranch. It was a well done plan, showing interior roads serving new residents to be built (per County Policy) solely at developer expense. However; Osborne asked about a Circulation Plan and impacts on transportation beyond the ranch development itself. The developers had originally thought the Master Plan of Caltrans for the State Route 1 (Coastal) Freeway would provide external circulation. However, the California Highway Commission had recently deleted the Coastal Freeway from State planning at the behest of the cities of Laguna Beach and Newport Beach. Accordingly, the developers suggested that the County Planning Commission undertake a Southeast Orange County Transportation Study. What emerged from the study was a substitution for the lost Coastal Freeway that would be adopted by the County as the San Joaquin Transportation Corridor Plan.

The Planning Commission then asked Osborne's Planning Department to do additional planning for the eastern foothills of the county. Thus, the Foothill (Mission Viejo & southerly) Corridor and the Eastern (Irvine & central) Corridor Plans emerged. At the time there was no preconceived idea whether the needed highways would be either county arterials or freeways. Nor was there any concept for funding, other than they would be local, not State, projects. In time the scope of the plans grew, and the board adopted a transportation impacts fee that would be assessed upon subdividers for partial funding of the planned arterial roads.

Soon after the County's corridor plans were adopted, the San Joaquin Transportation Corridor and the Foothill/Eastern Transportation Corridor agencies (TCAs) were created by State legislation. In the absence of any promise for State funding for freeways, the next concept to occur was authorization of revenue bonds financed by user tolls for the high-volume, high-speed, limited access portions of the circulation system. The TCA would have a board of directors with members appointed by each of the jurisdictions within the respective TCA benefit area. The formative state legislation would allow the issuance of bonds for construction to be financed solely from user fees. The issuance of bonds was successful, construction of the two separate Toll Roads proceeded under another innovation referred to as "Design/Build" concept, rather than the under traditional Public Works contract laws. The new Toll Road operations would be similar to the traditional State Freeways, with the exception that tolls would be collected either at cash toll booths or by electronic transponders with billing to subscribers credit cards. Policing would be by California Highway Patrol and roadway maintenance would be by contract with the California Department of Transportation (Caltrans). After 35 years of

toll operations the revenue bonds would be retired and Caltrans would add the TCA system to “Freeway” operations.

In 1974 the Board of Supervisors created the concept of the “Environmental Management Agency” (EMA), Osborne was appointed as the new agency’s executive director and he was given the task of implementing an organizational plan developed by the County Administrative Office. This involved combining the former departments of Planning, Building, Roads, Harbors Beaches and Parks, Flood Control, Solid Waste and Water Pollution, and Air Pollution. The former department heads would report to the EMA Director who in turn administered agency operations with oversight by the Board of Supervisors, all with the advice of county Counsel.

Implementing the EMA organization, among other things involved some modifications of County ordinances, and legislation to revise portions of the Orange County Flood Control Act, and the Streets and Highways Code of the State. By mid-1975 the legislative work was completed and the reorganized functions began. Later, the Board would again restructure. The small Air Pollution Department of Orange County would go to a newly formed Air Quality Management District covering several of the regions counties. The rapidly growing Solid Waste function would go to the County’s new General Services Agency and the Water Pollution department would be superseded by another regional agency, the Santa Ana River Regional Water Quality Control Board (a Unit of the State Water Resources Control Board).

The Orange County Flood Control Act was modified to allow the district to remain as a funding agency with the Board of Supervisors as the governing board, but the district’s employees would become members of EMA staff, performing the same work, but with added flexibility during dry weather to support other units such as the Road Department. Likewise, during flood emergencies road employees could be laterally assigned to support flood employees. Similar crossovers of employees could occur in the ranks of Beaches, Parks, Planning, Building, and Administration.