Upper NEWPORT BAY

Reim

SEWERAGE

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September 15, 1952

The Irvine Company
Tustin
California

Gentlemen:

In compliance with the agreement based upon your acceptance dated July 17, 1951 of our proposal dated July 9, 1951, we submit herewith our report on the Development of Upper Newport Bay and Adjacent Area, Orange County, California.

In complying with the terms of the agreement, we have studied current reports, past history of development in the area, present active development projects, the development plans which the Irvine Company envisions, and some of the plans of the Newport Harbor Board and have fully familiarized ourselves with the local situations. We reviewed specific existing reports such as the Report to the Orange County Board of Supervisors on the Improvement of Upper Newport Bay, Newport Bay Harbor, Orange County, California with the expressed permission of Mr. Robert Patterson the Author, with whom we consulted.

In further compliance with our agreement we reviewed the available data and made our observations and studies and analyses of the various situations to determine the best manner to assure the optimum development of Upper Newport Bay. Whether or not our conclusions are in agreement with prior reports on this development, we have nevertheless, against the background of our experience in the related fields in all parts of the world, integrated them into principles by which a plan of development can be formulated.

In prior reports there are many points concerning basic requirements and the evaluation of the benefits of the development of Upper Newport Bay, with which we fully agree. However we do not hold that sound future planning for the development of Newport Bay and Adjacent Area can or should be based upon a virtual public monopoly of waterfront development.

In preparing this report we have been aware of the need for an instrument that serves in a broad sense to guide the preparation of a Master Plan and yet to allow for the maximum lattitude in formulating The Plan and in fostering its accomplishment.

We found it better therefore to set forth our ideas in terms of principles (and discussion thereof) rather than to prepare a fixed plan because (1) there are so many unsolved problems concerning the development of the area which have been created and made acute by the extremely rapid growth of the community and divergent ideologies and (2) a broad equitable basis upon which to resolve these problems must be evolved if a "Master Plan" is to be developed which has in it the elements of successful accomplishment.

The genius of any plan lies in the whole hearted approval of its terms and in the understanding cooperation in its accomplishment by the parties of interest, each of whom assumes full responsibility for the individual parts of the plan which devolve upon them. This is invariably true and such cooperative action, often through some type of a Board of Directors, has been recommended by us for individual projects in widely separated parts of the world.

The importance of a continuing development of Upper Newport Bay and Adjacent Area is of such magnitude that all pertinent problems and variance of ideologies should be resolved in order that the orderly progressive improvement of this area shall not be delayed or aborted.

We therefore recommend in the body of this report that (1) "a conference or series of conferences be arranged between the interested parties involved in the Bay development" (2) "such conference be held with the express purpose and firm intention of agreeing upon a Master Plan for the Development of Upper Newport Bay and the assignment of responsibility for its accomplishment", and (3) "such conference be approached with open minds and a "Master Attitude" based on the principles set forth" therein be maintained.

Many persons and organizations have contributed information and data used in the preparation of this report and their cooperation is gratefully acknowledged. No listing is made of any in order that all may take the credit due and known to them.

Very truly yours,

KNAPPEN TIPPETTS ABBETT ENGINEERING CO.

By Paul F. Keim

Paul F. Keim, ~~Associate~~,
Registered Civil Engineer #5541
State of California

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REPORT ON THE DEVELOPMENT OF UPPER NEWPORT BAY
AND ADJACENT AREA
ORANGE COUNTY, CALIFORNIA

I. DESCRIPTION OF AREA:

Lower Newport Bay has been developed as a recreational and commercial area of major importance in the economy of Southern California. This development was made physically possible by the diversion of the Santa Ana River to a new outlet and the improvement of the abandoned channel by extensive dredging and bulkheading. This work was done in accordance with the criteria for navigable waters, and to bulkhead and pierhead lines set forth and established by the Corps of Engineers, U. S. Army. A part of the cost of development of the waterway was borne by the United States, but the bulk of the waterfront and land development was by private capital.

Upper Newport Bay directly contiguous to the lower bay, now generally unimproved offers similar possibilities for engineering development. It is the channel of an ancient stream of considerable volume which drained an area larger than that which is now tributary to it. The lower section of this ancient stream is now a tidal marsh surrounded by marine terraces, into which a small stream drains the runoff from an area of some 109 square miles. The Irvine Company has constructed a flood control dam with a spillway designed for a flow of 15,000 cfs, near the confluence of the stream and the upper bay. The spillway capacity is almost twice any recorded storm run-off, and the reservoir capacity for detention of flood water is about 5,000

acre feet. The stream is thus effectively controlled. The control of siltation in the channels and the provision for flood control of the developed waterfront property would therefore be a minor problem. The Delhi Drainage ditch of the Orange County Flood Control District with a capacity of 900 cfs takes the run-off from 15 square miles, and several local drainages also discharge into the upper bay.

The land immediately adjacent to the bay lies considerably above the water surface. The westerly and northwesterly periphery of the bay is a series of bluffs, the result of erosion through a mesa which now slopes slightly downward and away from the crest of the bluffs. These bluffs, because of the control of present streams entering the bay, are no longer subject to extreme erosion. Thus grading and stabilization to suit any development plan could be considered feasible. To the east and north the rolling terrain rises slightly away from the bay. From many points along the rim there is a full panoramic view of the mountains, the bay, and the ocean. A few choice sites along the upper bay are now being developed into country estates. The district as a whole however is largely undeveloped. In the past it has been used for grazing and specialized agriculture by the Rancho San Joaquin. The Irvine Company is using the bay to commercial advantage in salt production, in collection of oyster shell and in preparation of mineral aggregate. The use made of an area varies with the physical and economic progress of its development. Higher type uses for which areas become suited usually replace existing developments as the higher type developments become economically possible of achievement.

From the time of the early California Padres the advantage of the climate and the resources of Orange County have been known and documentation of these is available in existing reports on the proposed

developments of Upper Newport Bay. These are real advantages and have combined to encourage a considerable and steadily increasing influx of people into the area. Because of this influx there is a growing demand for the development of land for residental use, recreational facilities and the extension of roads and service utilities. These pressing needs specifically focus attention upon the necessity for the planned improvement of the undeveloped areas, especially the protected waters and property adjacent thereto. The potential value of Upper Newport Bay is tremendous and any unwise step taken at an early stage of development can reduce the ultimate value of the result by amounts which may well nullify the advantage of the whole project.

II. FUTURE DEVELOPMENT:

Much basic data have been compiled recently relative to the development of the area under discussion and are available in public reports, and it does not appear necessary to repeat such data herein. Particular mention is made however of the Orange County Sewerage Survey, 1946-47, by Messrs. Hyde and Rawn and the Report on the Improvement of Upper Newport Bay, 1950, by Mr. R. L. Patterson, both of which are valuable.

Forseeing the tremendous potential value of the development of Upper Newport Bay to all concerned, the owners of the adjacent land are anxious to have the project developed for the maximum benefit of all. To that end they requested this review of the pertinent data. They realize, and all concerned must realize, that the long term value of the project may fall short of the maximum potential unless the major concepts of the plan evolved are satisfactory to all concerned and such plan is followed throughout the development period; providing, of course, for such minor changes as the wisdom of time and future experience may

prove necessary.

The Lower Bay has been developed almost to the saturation point in the short span of 25 years, but the Upper Bay which offers similar possibilities for development as an attractive residential and recreational area remains unimproved. The Upper Bay has been cut off from recreation development by a low pile trestle carrying U. S. Highway 101 Alternate, since the trestle has been and is an effective barrier to the entrance of all but small power boats. Until this barrier is eliminated the development of the Upper Bay to anything like its full potential must lie dormant.

Any development of the Upper Bay must reflect to the pecuniary advantage, not only of present owners and future investors but to the businessmen of the area, and to the County, the State and the Federal Government. The development must also change the Upper Bay from its present undeveloped state of low income and restricted recreational value to an area devoted to firstclass home sites, estates, recreation facilities, resort hotels and business centers. These changes must be carried out in an orderly manner, constructing complete parts of the development to function as units without interference, yet complementary with and to the construction of additional units.

Due cognizance must be taken in advance of the ability of the various parties of interest to finance and maintain their portions of the project. All parties concerned must recognize that the greatest natural asset of the area is the bay with its potential landlocked anchorage and sheltered sand beaches.

The development of this potential is of basic and community wide interest to Orange County, and it should proceed with mutual consideration of this interest and the background, rights and desires

of the property owners. Developed in this way, a public service will have been performed by providing facilities and investments which assist in the solution of the problems of the growing community. No conflict of interest which should delay the orderly, progressive improvement of this area is recognized.

III. SCOPE OF REPORT:

The analysis of problems incident to the establishment of a program for the development of Upper Newport Bay form the scope of this report. Establishing and listing of the parties at interest; navigation access to the upper bay; major roads for automotive access; facilities for Air access; dredging and disposition of spoil; and recreational areas and parks, utilities and general cost data are the chief topics of discussion.

The conclusions and recommendations are based on careful study of all available information, detailed examination of the area, and conferences with all the parties who should be concerned in the optimum development of the project.

This Report presents the elements of a Master Plan for the development of the Upper Bay based upon a concept of good engineering, sound public policy, and practical attainment.

IV. PARTIES OF INTEREST:

Before any substantial expenditure on this project shall be made by anyone, the Master Plan for the development of the area should be approved and adopted by the interested parties, who are:

1. The United States of America which has jurisdiction over navigable waters. The U. S. Engineer Department by delegated authority will pass on lines and depths of dredging, and on clearances over or under the channel as

may be required by the design.

2. The State of California, which has proprietary interests in the tide lands involved and jurisdiction over certain highways in the area especially the bridge on Highway 101A.
3. Orange County, which has been granted trust custody of the State's interests in the tide lands. The Orange County Harbor District has administrative jurisdiction of the Upper Bay.
4. The local communities which have an interest in the business and overall development of the area.
5. Private property owners, chief of which is the Irvine Company, who own a large part of the land within the area.

While this report does not presume to settle the respective interests, responsibilities, and financial participation in the project, it goes without further comment that there is a necessity for a clarification of the problems involved, a crystalization of differences of opinion, the development of a project philosophy and an acceptable plan. The plan should rest upon one premise only---creating the maximum possible ultimate value from the water and land in and adjacent to the bay. However, to repeat, this report does submit the elements of a plan for progressive economical development of the Upper Bay Area which can be the basis of a conference for a plan, which we hope and believe may be adopted to the mutual advantage of all the parties.

The best service which could be rendered to the entire community consists in devising the means for getting a plan for the development of Upper Newport Bay crystalized now. Any such plan to be effective must have approval of all interested parties and provision for the accomplishment of the major features of the plan should be made a part of

the immediate fiscal planning of those with whom responsibility for the individual projects rests.

V. NAVIGATION ACCESS TO UPPER NEWPORT BAY:

The Upper Bay can be developed as an extension of the existing harbor only when open water access between the upper and lower bays is available for all except the largest pleasure boats. This free access is an urgent item which should be included in the budgeting for the State Highway Program. The steps necessary to obtain free open water access to Upper Newport Bay should be taken first as such access is the key to the entire project.

The trestle bridge carrying U. S. Highway 101A across Newport Bay, built in 1932, consists of thirty-four spans of nineteen feet each and a forty foot "movable" span near the center of the structure. This pseudo "movable" span, which has never been moved, allows a clear channel of thirty-five feet between piling and when in place allows head room for small boats only. The bents consist of nine wood piles and they are askew to the channel, acting as a retard, with the result that silting occurs downstream. The introduction of a "movable" span is apparently a recognition on the part of Highway Officials of the right of access to the old Newport Landing upstream of the trestle. This landing received ocean going vessels as far back as 1875 and served the area for many years.

The following projects by which the present obstruction could be removed have been studied in the light of six major considerations. These are:

1. Effect upon private and business property.
2. Effect upon highway traffic and safety.
3. Appearance of the crossing structure.
4. Cost of land acquisition.

5. Highway relocation costs.

6. Cost of construction.

A. Movable Span in Present Structure

Mechanization of the present "movable" span, or of any lift span, would be an intolerable impediment to highway traffic and navigation alike, and the idea must be discarded at once.

B. Submarine Tube

The four lane divided tube has been carefully considered. It would have to be constructed at one side of the present bridge in order to maintain the traffic at all and the resulting congestion and confusion would last for many months. It appears that the requirements of cover and necessary draught over the tube structure are such that excavation would have to be carried approximately fifty feet below low water and sixty feet lower than the present bridge approaches. Assuming a four percent gradient on both sides of the channel, the result would be two-thirds of a mile of depressed roadway, causing the destruction of a like amount of valuable highway frontage, the deadending of 17th Street and Bayside Drive at the Highway, the isolation of high class residential districts south of the Highway, and certain other traffic interferences. This would be the highest cost means of crossing the bay. It is believed this alternative would be barred from further consideration by reason of the cost as well as the impairment of existing values.

C. Remote Crossing

By remote crossing is meant any crossing of the Bay remotely located from the present structure, as for instance, across the middle, or across the upper end of the Bay. Such route, because of land acquisition and highway relocation costs, and the traffic time and distance factor is also considered to be too costly to permit further discussion,

regardless of any other merits which could be attributed to it.

D. High Bridge Crossing on Present Bridge Alignment

1. Effect on Private and Business Property:

Between a bluff crossing and the present-alignment crossing there is a real difference. The present alignment crossing would destroy the value of that property along the west approach. It would also affect those few businesses which are now clustered about the intersection of 17th Street and 101A Highway. Furthermore the west approach would be very unsightly and undesireable to the occupants of the home property in the Bay Shore tract. The property lying beyond the approaches to the bridge structure would be unaffected.

2. Effect on Highway Transportation and Safety:

The greatest advantage of this location for a crossing is that it presents a straight alignment through a congested area. However, speed restrictions are necessary because of the nature of the area through which it traverses, access to adjacent property would be difficult, and the intersection of 17th Street and the Highway would be practically impossible to design. Furthermore, the rerouting of traffic during construction of a bridge over the present alignment would be difficult and costly.

3. Appearance of the Structure:

The bridge is an aesthetic problem and could be made attractive, but the approaches would be unsightly and would damage the property adjacent to them.

4. Cost of Construction:

The cost of construction would be greater than that of the

bluff crossings in that a high level fill and/or structural ramp would be required for both approaches. Such extra cost is partially offset in the case of the bluff crossing herein proposed by the cost of grading the road on face of the bluff for the west approach. Otherwise, the costs of various bridge structures would probably be roughly equal.

5. Cost of Land Acquisition:

In this respect, the cost of the present alignment crossing would be nil for the actual structure since it would be on present State right-of-way. The cost of possible severance damage for and in the approach zones would be high.

6. Highway Relocation Costs:

The Expense of highway relocation is negligible for either location.

Conclusion: This alternate was not considered since it would not fit or make use of the natural topography, and is generally more costly and less desirable from a property viewpoint.

E. High Bridge Crossing Using West Bluff as an Approach:

A high bridge crossing upon the bluff just northeast of the present structure is indicated from every point of view. The location of the west approach to such a bridge is the principal problem. Mr. Patterson in his report shows a Western approach which runs along "Cliff Drive" through cliff-top subdivision land, while the west approach shown in this report cuts upwards from 101A, across the bluff face to the elevation of the west bridge abutment. Discussion of these alternates follows using the six criteria listed above under Major Considerations.

1. Effect on Private and Business Property:

Altho this is a most difficult subject to appraise, it is

apparent that the west approach which drops down the bluff face would be less destructive of private property than an approach which runs through improved subdivision land. The avoidance of this valuable property is a prime objective of the west approach design which cuts down along the face of the cliff to the existing 101A right-of-way. It is acknowledged, however, that the cut down the face of the bluff might have a slight effect upon the view from the hill which some builders want and buyers may expect. This is believed not to be serious.

The route through Cliff Drive at the top of the bluff is considered to be depressive of land values on both sides of its route since it traverses a high class residental area.

Another possible approach is at the North side of the Cliff Haven Tract. This requires adverse gradient, but more serious is the cost of right-of-way and the destruction of property values by such a location through a high class residential subdivision. Also, both of these locations mentioned would involve the abandonment of considerable four lane highway. Furthermore, the routing of an arterial highway on 16th Street along school grounds is not recommended.

The approach herein proposed avoids many of these undesirable effects; however, along its route some rearrangement of some present business frontage would result and possibly two or three business fronts would be eliminated. This readjustment results in less loss than would be the case if the approach were made through the Cliff Haven Tract proposed by others.

2. Effect Upon Highway Traffic and Safety:

The Grade and curvature of the bluff crossings would slow

traffic, by reason of a 40 MPH limit which would be imposed. Safety would be increased over the present arrangement because of the separation of local and thru traffic, and by the provision of one way traffic lanes for entering and leaving the highway. With the highway in the present location the speed limit should be lowered to 35 MPH within the area of mixed through and local traffic to comply with current safety standards.

For a speed of 40 MPH, the American Association of State Highway Officials accepts a radius of 410 feet but recommends 520 feet as desirable. The radius herein proposed for the high level bridge approaches is 540 feet and therefore the 40 MPH speed for through traffic could be easily maintained with reasonable safety.

3. Appearance of the Crossing Structure:

In none of the possible crossings here discussed, would unpleasing vistas be created. Here, as in the San Francisco Bay Area, there is little doubt that great interest and beauty can be added to an already magnificient view by the construction of well designed bridges.

The bluff crossing presented in this report is an example of a bridge structure which presents a pleasing appearance.

4. The Cost of Construction:

The prime advantage of a high bridge bluff crossing lies in the reduced cost of construction brought about by the use of the bluff elevation to support the west approach to the bridge.

The east approach can be an embankment or an appropriate type of framed structure, or a combination of the two. With

excess dredged material to be disposed of, an embankment will probably be preferable.

5. Land Acquisition:

Land acquisition costs would not be excessive since the east approach crosses over undeveloped bay land. However, it is considered that any west approach, which runs through bluff-top subdivision land, would be excessively costly in acquisition besides being destructive to adjoining property values.

6. Highway Relocation Costs:

These expenses are reduced almost to the minimum, although the costs would be somewhat higher than those of the crossing which would use the present bridge alignment. The cost of detouring the traffic during construction would add materially to the cost of a structure on the present alignment.

A high bridge crossing using the bluff westerly of the Bay as an approach is recommended. The accompanying plan map and profile show the proposed location. The bridge will not impede highway traffic or navigation, will not be destructive of existing values, will not abridge future development possibilities and the cost of construction will not be excessive. The overall arrangement of traffic routes to the bridge is both practical and attractive and allows easy and safe interchanges with 17th Street and other intersecting streets.

The structure recommended is a three span bridge with a center span bowstring truss 200 feet long and two side spans, each a deck truss 100 feet long. The center span clearance is 60 feet above mean lower low water or 57.55 feet elevation

above Highway datum.

Examination of the piling log of the existing trestle indicates that excellent foundation conditions for bridge piers and abutments are present and that no unusual construction difficulties are to be expected.

The vertical clearance proposed will pass all except the tallest masts of pleasure boats. The horizontal clear span of 200 feet and the 100 feet side spans suggested provide the channel width to maintain the desirable maximum current of about 2 knots against which pleasure craft must operate. Then too, in consideration of the eddy winds off the bluff to the west these minimum clear channels are requisite for boating safety. It is also desirable that the span be normal to the channel direction in order to create the minimum flow disturbance around the piers. Small power boats can use the side channels with safety and all can use the center clear span in any boating weather or at any stage of the tide.

The estimates made herein are for four lane crossing structures. Contact with the State Highway Department indicates no present plans for any change in Highway 101A, but there are plans for a system of freeways a short distance back from the coast with laterals to serve the various coast communities. This, it is expected, will direct traffic from the Coast Highway to the extent that four lanes may continue to be adequate. Then too there is herein proposed a mesa road on the east side of the bay which should carry a large part of the traffic from the vicinity of Balboa Island and southeast directly into the freeway or highways to the north, thus diverting it

from the Newport Bay Bridge.

On the other hand despite the completion of the proposed freeways it is entirely possible that this portion of 101A Highway would follow the pattern already so well established in California. The freeways, rather than draining this congested area of its overload, might instead serve to open larger areas to Los Angeles commuter homesites. This, in turn, would place a still greater load on an already overloaded and Nationally popular route of travel. Such pattern of traffic behavior has been well demonstrated in the San Francisco Bay area.

However it appears that a four lane crossing will suffice and that the very necessary development of Upper Newport Bay should not be delayed because of the increased cost of a crossing project with greater capacity.

VI. ROADS FOR AUTOMOTIVE ACCESS

The relocation of Highway 101A has been discussed in the preceding section in its relation to water access to Upper Newport Bay and with regard to the freeways which are in the State Highway Plan to be built farther to the north.

17th Street, a heavily travelled County road, is the other major traffic artery affected by a plan to obtain free water access to the upper bay. This road should not cross Highway 101A on grade and yet must be accessible to and from it. This, for local beach bound traffic, can be accomplished by taking 17th Street through an underpass to the present highway. For South and East bound traffic, the movement would be through the underpass, west on the present highway to the new location of Highway 101A and thence by right turn into the stream of traffic. At

the north entrance to the underpass two turn-outs could be provided, one for the west bound traffic from 17th Street, the other for north-bound traffic leaving the Highway. Other traffic under this plan would disperse on local roads as required and could avoid through highway traffic.

The relocation and straightening of 17th Street north of 101A was considered but it seems preferable for a present plan to leave the location as it is. A four lane divided roadway on 17th Street through a two span underpass will safely handle the traffic outlined above.

For the local traffic headed to the North and West from the east side of the Bay a fully integrated intersection of the proposed perimeter road from the North, the present Bayside Drive from the South and Highway 101A controlled by traffic lights will properly direct traffic into desired channels without inordinate delay of any group of vehicles. A clover leaf grade separation as proposed by the Patterson report could be used if and when traffic justified that type of structure.

A perimeter road should be constructed around the Upper Bay to serve the population which will follow the improvement of that area. The areas along the waterfront are an essential part of the recreational facilities which should be free from the nuisance and hazard of through automobile traffic yet made easily accessible from the through routes and peripheral streets. The portion of the present palisades road now known as Bayside Drive which lies along the easterly side of the "Upper Bay" should be discontinued. The perimeter roads should be located on the bluff in such a way as to serve the subdivisions projected, with access laterals to residential waterfront property, boat berthings and parks as may be needed.

The accompanying map indicates a possible perimeter road

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The accompanying map indicates a possible perimeter road

system to serve the area. Stubs for local service roads are shown at various locations in approximately correct number but not in an unchangeable or necessarily correct location. Close study of the area as development progresses should be made to determine what if any changes or extensions should be made. Plate Number 21 of the Patterson report goes into much more detail, presenting a possible pattern of local service roads but not necessarily a fixed pattern.

These perimeter and access roads present no construction difficulties. Good drainage and sandy soil allow the construction of comparatively inexpensive pavements which would have satisfactory wearing characteristics and traffic capacity.

Local service roads can be located as the development of each area progresses. Subdivision streets and access roads from the major perimeter roads are a proper charge against the property made available for subdivisions by the major plan. These subdivision roads are a subject which requires study for each area to be developed. They should be adequate not only for the traffic within the subdivision but also to distribute this traffic to the perimeter system and major highways. Rigid control of the design of local streets should be maintained and an adequate system should be the mutual aim of both the developer and the local administrative political units.

VII. FACILITIES FOR AIR ACCESS:

More and more the movement of sportsmen to the recreational centers is by air. One reason for this, other than time saving, is the large number of boating enthusiasts and other sportspeople who are also owners of private planes. Little imagination is required to picture a busy sportsman's desire to fly to Newport, Costa Mesa or Balboa for a few hours of yachting which would otherwise be limited to week-ends

or vacations.

It is believed that a class III Airport serving an area which offers the possibilities inherent in Upper Newport Bay can contribute to the desirability and commercial advantage of the existing community and encourage high type development and use of the land and waters respectively.

VIII. DREDGING AND DISPOSITION OF SPOIL:

Comparison of the latest hydrographic chart of Upper Newport Bay with the chart published seventy-five years ago shows no perceptible change over the years in the location of the channel through the marsh. This persistence suggests the wisdom of preserving the existing channel location as far as possible in any plan for widening and deepening the waterway. The cutting of new channels and filling in the old would in general require the use of more extensive rip-rap and bulkheads to hold property line than if the channel is not disturbed. Thus any channel change would add greatly to the first cost as well as the maintenance cost of the developed property without proportionate increase in the value thereof. Since the channel improvement is for boating, other aquatic sports and beach recreation, there is no object in getting from one end of the Bay to the other in a particular time which would justify any additional expense for general channel changes.

The State of California's interest in the tide and submerged lands was granted to Orange County by an Act of the State Legislature in 1919. The adjacent uplands are owned by the Irvine Company which also has a large tideland ownership in the north basin, established by patent of record on Page 241 Book #1 of Patents. The lines of ordinary high tide were confirmed by the Superior Court of Orange County in 1926.

While it is proposed to follow generally the existing channel

in the development plan, it will be noted that in places this is not done in order to provide the necessary channel width and to create where possible the useable and economical waterfront property. In the north basin the bulkhead line shown on the plan herein developed is bayward of the established high tide line in order to make complete use of the spoil from the dredging of the necessary channel and basin. New property and tide lines will be a matter for negotiated agreement between the parties of interest. The necessary agreements will be made easier when it is realized that in clearing any channel of proper hydraulic characteristics the dredged material is thrown upon marsh and tide lands, a substantial proportion of which is the adjudicated property of Orange County. The dredging will create (1) a considerable acreage of new Orange County land bordered by Orange County frontage, (2) a considerable acreage of Irvine land bordered by Orange County frontage and (3) Irvine land bordered by new Irvine waterfront. It will also detract from marshlands now the property of private owners. This peculiar land distribution problem points to the necessity for revision of ownership and channel lines if any or all of the proposed made land and adjacent beaches are to be used to the best advantage. This will be true regardless of who furnishes the construction capital for the channel dredging. It is recommended that respective holdings of each be consolidated and simplified for use in the plan of development.

In the ultimate development of the Bay it is expected that the large basin at the north end now separated from the rest of the bay by a dyke, incident to the salt production operation of the Irvine Company, will be the center of Boating activity and it, like the channel, should be dredged to a depth of ten feet.

The dredging plan shown in this report shows a channel of satis-

factory size to accommodate the tidal prism necessary to keep the bay clean and unpolluted. The course outlined here follows the historical channel more nearly than other proposals. This accomplishes the desired effect of minimizing yearly operational costs for desilting, bank protection and other maintenance charges and at the same time complies in general with certain essential criteria for beaches. The plan also shows several boat basins at locations where the dredging required is least, but yet where basins would be congruous with other developments. It is difficult to set forth the larger plan layout without local detail but if planned within the criteria enumerated herein it provides an adequate guide.

As the provision of free water access is the key to any developmental program for the Upper Bay, "Boats" are the key to the bays' popularity. One of the bases of land value increase is popularity, and that will vary directly with the convenience of the boating facilities. The necessity for ample and properly located and designed boat basins is apparent. Some considerations are here given as a basis for the planning of boating facilities.

1. Completion Time. It is recognized that full boat facilities cannot be completed at once nor will they all be needed at once, hence a stage development is indicated.

2. Variation. Many variations in location and detail are possible, and the general details and locations of boat berthing should be settled by a conference of interested parties and incorporated into the Master Plan. The exact details can be worked out by the owners of frontage to suit local needs as they appear.

Such a Master Plan will prevent future need to change the configuration of the channel thus eliminating infringement upon long range optimum boat, beach and shore facilities development.

Newport Bay's beaches are its most valuable single commodity. The value of waterfrontage is well known and those lots which would have access to, or would be near waterfront in any development become tremendously valuable. It makes sense, therefore, that consideration be given to the provision of a maximum length of waterline consistent with other developments. This length of useable frontage may be created by two means:

1. Locate the water areas so as to allow where practicable a generous strip of land along the base of the bluffs landward of the bulkhead line, and

2. Create, consistent with channel requirements, the most irregular water line possible. An irregular shoreline is interesting but land area along it is necessary to support the waterfront development.

Dredged material will be used to build up the marsh land as has been done on the Lower Bay. Picture illustrations herein show the type of made land which can be obtained. The general movement of material will be from north to south, but none should be transported south of the highway. The east approach to the proposed bridge will require considerable yardage and any excess can be used to advantage north of the Highway to raise the made land to a somewhat higher elevation. The piping of material to the ocean beach would be very expensive and would cause confusion in the Lower Bay.

This dredging may be accomplished according to approved plans over the development period either by contract or by the owners directly. Unless financing for the entire dredging job can be arranged at the start so that a contractor can expect to work continuously to completion, it is unlikely the dredging can be done economically by contract.

Dredging of the channel should start at the south end of the Upper Bay from the tailings of which the bridge approach fill should be made. Additional embankment should come from the pool in the proposed County Park. The sequence of operations from that point will depend largely on economic factors. Several plans for the prosecution of the dredging are possible and will need study when the Master Plan has been agreed upon.

IX. RECREATIONAL AREAS AND PARKS:

At the southeast end of the Upper Bay and adjacent to the Highway there is an area comprising about 100 acres which lies bayward of the established line of ordinary high tide. This location is convenient to the Newport Beach community, and with suitable facilities and attractive planting, it can be made a recreation center for the entire County.

Within this area a pool or basin 20 acres in area and eight feet deep could be dredged. Water level could be maintained approximately at high tide by automatic gates. The pool would be closed to boats and used only for model yachts and for bathing on its gently sloped sand beaches.

A site at the foot of 23rd Street convenient to the growing community of Costa Mesa could be procured by the County and improved as a park. There is an active spring in this area which was marked on the chart of seventy-five years ago. Around this spring a park with lawns and interesting planting supplied with natural fresh water would be a valuable adjunct to the development of the area.

It is believed two such public parks will adequately serve the needs of the Upper Bay for the forseeable future. Their improvement and upkeep would absorb all the County funds likely to be budgeted to

this vicinity for recreational purposes.

The value of future real estate developments in the area would be greatly enhanced by carefully designed land uses. A number of small parks could be scattered about the bay area in and as an integral part of the subdivision planning. The reoccurring green and beautifully landscaped "wild areas" relieve subdivision monotony. The small, widely dispersed and tangled "wildwood" park areas of Seattle are an illustration of what this type of park can do for land values and for public morale. The detail and number of such parks is a matter of public concern which the private developers and the other interested parties should settle in conference.

As matters for discussion it is pointed out that:

(1) Two methods of selecting park sites are applicable in the Upper Newport Bay area without excessive cost to the public.

a. Build parks upon currently owned public lands not disturbing private ownership.

b. Build additional parks as required in locations carefully selected to give optimum service, obtaining sites by the exchange of public land for private land, dollar for dollar, so as to provide the ultimate in charm and interest for the public, at the same time providing adequate facilities and allowing private owners to retain certain inherent rights in the development of property.

(2) Large Parks may concentrate people in one area and

increase the possibility of Coney Island type of development which is not desirable in Upper Newport Bay. Scattered small parks minimize the possibility of traffic congestion and crowds.

(3) Small parks scattered throughout the area have an intimacy which would add to their charm but if used for uncontrolled general recreation, they will detract from the property values which the development is designed to create.

(4) The parks should be carefully laid out, especially designed and planted in conformance with the topography and indigenous flora, with such facilities for swimming, boating and picnic areas as are consistent with the general development and agreed plan.

(5) Public Parks whether large or small must be policed to avoid general confusion and the creation of nuisances which outweigh the recreational value of the parks.

It is assumed that all parties will agree to the advantages of sufficient parks and recreational areas and can reach substantial agreement as to their location and arrangements.

X. UTILITIES:

Water is supplied to the Upper Bay area by three Water Districts pumping from wells to the north and west of the Bay. While wells may be an uncertain source of water in a few years, the area is also within the Coastal Municipal Water District, which makes water available from the Metropolitan Water District, of Southern California.

Sewerage has been a problem in Orange County generally and in

the development of Newport Beach and Costa Mesa the provision of sanitation and sewage disposal is a real problem. Orange County Sanitary District No. 6 includes the area on the west side of the Bay and District No. 5 includes the east side of the Bay and the tidal marsh. It is proposed that sewage from both Districts reach the disposal facilities at the mouth of the Santa Ana River by means of the Newport Beach trunk. Realization of this is now possible since a plan for a complete facility satisfactory to all the Districts in Orange County has been evolved. The additional service required by the development of Upper Newport Bay must be a part of any county-wide sanitary plan.

In a residential and recreational area such as the Upper Bay, extra precaution must be taken to keep the open water and the beaches free from pollution of every sort. The regulations of the State Department of Public Health and the State Water Pollution Board prescribe rigid controls for the prevention of all sanitation nuisance. The subdividers will of necessity be guided by these regulations in their plans for the several developments.

With the construction of a proposed high bridge the water mains and the Newport Beach trunk sewer now crossing the Bay on the existing trestle will have to be changed. The possibility of this change should be taken into account in the Orange County Sanitation Districts' Plans. Several alternate crossings are possible, the most desirable of which will depend upon the final sanitary district plan for Districts Number 5 and 6.

As a development detail, the placing of electric and telephone utilities underground is a desirable feature the economic feasibility of which should be carefully considered.

XI. COST DATA.

It is an uncertain undertaking to estimate construction costs for a project that will certainly carry over a period of ten years or more. The estimates herein are based on current cost data without speculation as to future wage scales, material costs, war controls or further dollar devaluation.

Construction costs are estimated herein only for major projects which are of general and community benefit, such as channel dredging, bridges, main roads, and recreation centers, which may properly be paid for with public funds. General development projects which are of particular and immediate benefit to definite improvements, such as access roads, street paving, and boat berthing, should be paid for by those making the improvements and although they are discussed in the text no estimates for them are included herein.

We believe that public recreation centers should be developed and maintained by political subdivisions whereas the construction and operation of boat basins should be by the owners of the waterfront properties. These facilities should be made available to the general public in proportion to the demand. The best interest of the community will be promoted when (1) any owner of water frontage is permitted to develop it within established bulkhead lines and promulgated regulations; (2) development proceeds only as rapidly as the demand exists or can be stimulated; (3) public bodies provide the access to the waterways and large recreation centers as required, leaving the payment for special facilities to the users of such facilities; and (4) special facilities and subdivisions are left to be constructed by private capital.

This report, as we have stated, does not presume to detail

the participation of the several interested parties in the expense of this project, but certain observations seem both obvious and pertinent in this particular case:

The State, perhaps with Federal aid, should bear the cost of removing the barrier to navigation and making the Upper Bay again accessible to pleasure and commercial vessels.

Orange County should pay for main roads, the large parks and general recreation centers, as such improvements become desirable and necessary over a period of years.

That the private owners involved should have freedom of development within the frame-work of a mutually agreed upon Master Plan for the improvement of Upper Newport Bay.

XII. CONCLUSIONS AND RECOMMENDATIONS:

A. Conclusions:

The development of Upper Newport Bay will serve to the advantage of all communities contiguous to it. The adoption of a master plan for its development, and an agreement on the financing of the major factors of the plan are essentials in realizing this development.

It would appear virtually impossible for any one to prescribe a detailed master plan which would be acceptable to all concerned. From the realization of this fact grows the logical suggestion that all details of the master plan be settled at a conference or series of conferences, attended by all interested parties. The details of any plan may and likely will be amended or modified, but the general precepts here presented are adequate as a basis of discussion in the conferences, and as fundamentals for the agreement which must precede actual work.

An examination of the previous reports showsthere are many points as to basic requirements with which we agree. That the development of Upper Newport Bay is essential no one can gainsay, nor are the estimated benefits of the development valued too highly. That the public has an overall interest in any development and is entitled to consideration is not arguable nor is it unapparent that facilities for public use were in general not adequately planned in the present development of Newport Beach and Costa Mesa. At the same time future planning for any development in the adjacent areas should not and really can not be based upon a virtual public monopoly of the waterfront developments.

It is believed that any development program of progressive and stage construction for Upper Newport Bay will have to be supported over a period of years by private enterprise motivated by the expectation of making a profit.

In the development of the channel, considerable areas now in private ownership will be dredged away and large areas of tidelands lying outboard the 1926 decree line will be reclaimed. Compensation or damages must be paid for these private lands to be included in the public channel. It would not be practicable to develop all of the reclaimed lands with public funds, for in addition to the original investment, there are large annual costs for maintenance and policing that cannot be made self-liquidating. By a reasonable exchange of such areas, a substantial saving in the cost of acquisition of private lands will be effected and the public interest can be protected in the establishment of the recreational areas suggested in this report. At the same time the development of as large a water front as possible can be left to private capital, which will enhance the value of such water frontage and eventually inure to the public benefit by increased taxation.

The chief financial return to the County, we believe, must be from taxes on the eventual increased land and property valuation of the areas developed for residential and recreational purposes, not from the entry of the County into businesses which can be managed successfully by regulated private enterprise.

All interests agree that Upper Newport Bay is best suited to be a small boat and recreation harbor, with minimum commercial development for light maintenance of small craft only. We further believe that the area contiguous to it is ideally suited for a high class restricted residential district. Therefore the area should be designed not to encourage large noisy crowds of general recreation seekers but to keep Upper Newport Bay as high type residential and recreation area.

It is concluded that this development should not be a regional park and general recreation facility but an area in which boating and

yachting are encouraged and recreational opportunities are afforded.

It is believed that the Master Plan should embody a zoning system which controls the type of development which can be made in the area contiguous to Upper Newport Bay. Such zoning will encourage the highest possible type of development by insuring its continuance in that classification.

B. Recommendations:

1. Conference:

This Report recommends that a conference or series of conferences be arranged between the various interested parties involved in the Bay development.

2. Conference Purpose:

This Report also recommends that such conference be held with the express purpose and firm intention of agreeing upon a "Master Plan for the Development of Upper Newport Bay" and the assignment of responsibility for its accomplishment.

3. Conference Attitudes of Approach:

This Report further recommends that such conference be approached with open minds, and a "Master Attitude" based upon the following premises be maintained:

(a) 101A Highway Bridge:

The crossing of 101A Highway and Upper Bay inlet channel must be raised to an elevation of approximately 60 feet above M.L.L.W. to provide open water access to the Upper Bay if necessary development is to be considered. Such elevation is to be accomplished by a bluff crossing bridging the Bay just north of the present highway location, as shown in the

drawings included herein.

(b) Dredging:

(1) A channel 600 feet in surface width at mean high tide and 10 feet in depth at mean lower low water is required.

(2) A turning basin at the upper end of the Bay with depth of 10 feet and superficial area approximately as shown herein is required.

(3) Side extensions, when and as developed, should have a minimum depth of approximately 8 feet.

(4) The channel and its extensions should be laid out so as to create a shelf of variable width along the base of the bluffs, to the extent consistent with the hydraulic requirements of the channel.

(5) The completion time for a project of the magnitude of the development of Upper Newport Bay may cover a decade or more. The stages of development are variable in extent depending upon changing demands for building sites and recreation facilities and upon the availability of funds.

(6) Program the dredging so that it may be accomplished over a number of years. Thus it can be varied to suit year by year conditions.

(7) Careful use should be made of all dredged material, either as fill for new bridge approach, or for creation of useable land.

(c) Boating Berthing:

(1) Facilities should be provided ultimately for

approximately 2,500 boats at full capacity.

(2) Berthing basins should be strategically dispersed about the Bay Perimeter.

(3) A complete small boat basin, affording security and service, is relatively expensive to construct and requires a convenient and attractive site. To be financially successful it must be occupied nearly to capacity, and fees or rentals must be commensurate with the investment. The boat owners' willingness to pay will be governed by the facilities offered, which should include:

Accessibility of basin from land and water, good protection for berthed boats, convenient piers and walks for transferring passengers and supplies between boats and shore, convenient ship chandleries and boat supply centers, convenient transportation to shopping centers and dining and entertainment areas, electricity for flood lighting and for light and power on boats, water supply for fire protection and for individual boats, sanitary facilities, telephone system, facilities for boat handling and servicing vessels, possibilities for social functions.

Estimated costs for small boat basins are $1,500 per boat based on current construction costs. The annual operating and maintenance cost will be approximately $40.00 per boat.

(4) Complete agreement upon the location and capaci-

ties of the principal boat facilities and which facilities are to serve the general public and the local property holders and private local property holders, should be reached at an early stage. The plan should provide a maximum of convenience to boaters, and at the same time be consistent with the type of local development.

(d) Waterfront:

(1) The waterfront outline should contain as many front feet as possible, consistent with the maintenance of channel integrity and useable width of reclaimed land inboard the bulkhead lines. A maximum frontage is most desirable.

(e) Parks and Recreational Areas:

(1) Small Parks:

Dispersion of small parks about the bay perimeter avoids congestion, provides a maximum of intimacy and charm, and relieves the monotony of solidly settled subdivision homesites.

The parks are to be carefully designed and landscaped after the most modern practices so as to provide an area of interesting vistas and paths, not an area which invites general recreation.

Do not attempt to place all the park acreage required for the whole contributary area in and adjacent to Upper Newport Bay.

(2) Large Parks:

Location close to transportation to serve week-

end visitors.

Provide more public facilities and play fields than in small parks.

Coney Island type not desirable in this location.

(3) General Recreation Areas:

Camp sites, fireplaces, play fields, swimming beaches and boating facilities should be provided in larger public areas easily reached from major roads, and other access points.

These areas should be designed to care for the needs of the transient non-boating public, as well as the local population.

Parking areas at reasonable distances from the larger parks and recreation centers in which parking is compulsory would lessen local traffic congestion and enhance the value of these facilities.

(f) Finance:

(1) Fix responsibilities and program all work by stages consistent with financial ability of public and private groups responsible. This would encourage development by making it practicable for each group to proceed with their part of the program within their prerogatives on a realistic financial basis.

(2) Major projects should be financed by duly authorized Public Agencies responsible for providing water and highway access, recreation facilities and general public services.

(3) General development projects, should be financed and constructed by private capital with expectation of making a profit. Facilities for special types of recreation such as boating should be paid for by the users of the facilities. The construction and control of projects under this system is more flexible.

(4) Financing of small parks should be by private investors as their part of the program for construction of general development projects.

We express the hope and belief that all will recognize the mutuality of interest in making Upper Newport Bay one of the most popular and beautiful areas along the west coast.

PICTURES:

1. Air photo view of Upper and Lower Newport Bay looking northerly. This shows the large area which can be developed if rightly planned into an ideal residential and special recreational area without the usual growing pains. The owners of the large majority of the uplands and a part of the tide lands have a high-class, rigidly zoned development in mind.
2. West bank of Upper Bay just upstream of highway 101A bridge showing channel and variety of sites which have development possibilities for high class planned development.
3. Continuing to the North and East from picture 2, looking northeast over present channel showing made land in foreground and lagoon (right center) which is the location of a proposed County Park.
4. Continuing to the East from picture 3, showing County Park location and beginning of east approach to bridge, tangent to highway curve at left center.
5. View of highway 101A bridge over the bay looking from the Upper Bay to the Lower Bay. This is the definite bottleneck which blocks access to inland waters delaying if not prohibiting the development of the Upper Bay.
6. View looking southwest toward Balboa from view homes and estates now being constructed at head of Upper Newport Bay, and showing large amount of land inside the bay area now belonging to the Irvine Company through which extensive dredging would be necessary.
7. Looking northeast at ridge (center) which has the view shown in picture 6. The dredging of a channel, filling of the marsh and elimination of the through road along the base of the far bluff are contemplated. General public recreational projects in such an area

would (1) greatly lessen the desirability of homes built thereon, (2) lower the probable value and tax base of them and (3) definitely eliminate the possibility of making and maintaining a high class development of the area.

8. View looking westerly over Linda Island showing type of "made land" which can be expected from dredging the channel.

9. Aerial view northerly over central and northerly portion of Upper Newport Bay in more detail than in picture number 1. Picture number 6 is in the same area but looking southerly.

10. Aerial view looking southwesterly at Bay Shores Tract and Lido Island when they were first developed and subdivided. This corresponds somewhat to the present situation in Linda Island shown in picture number 8.

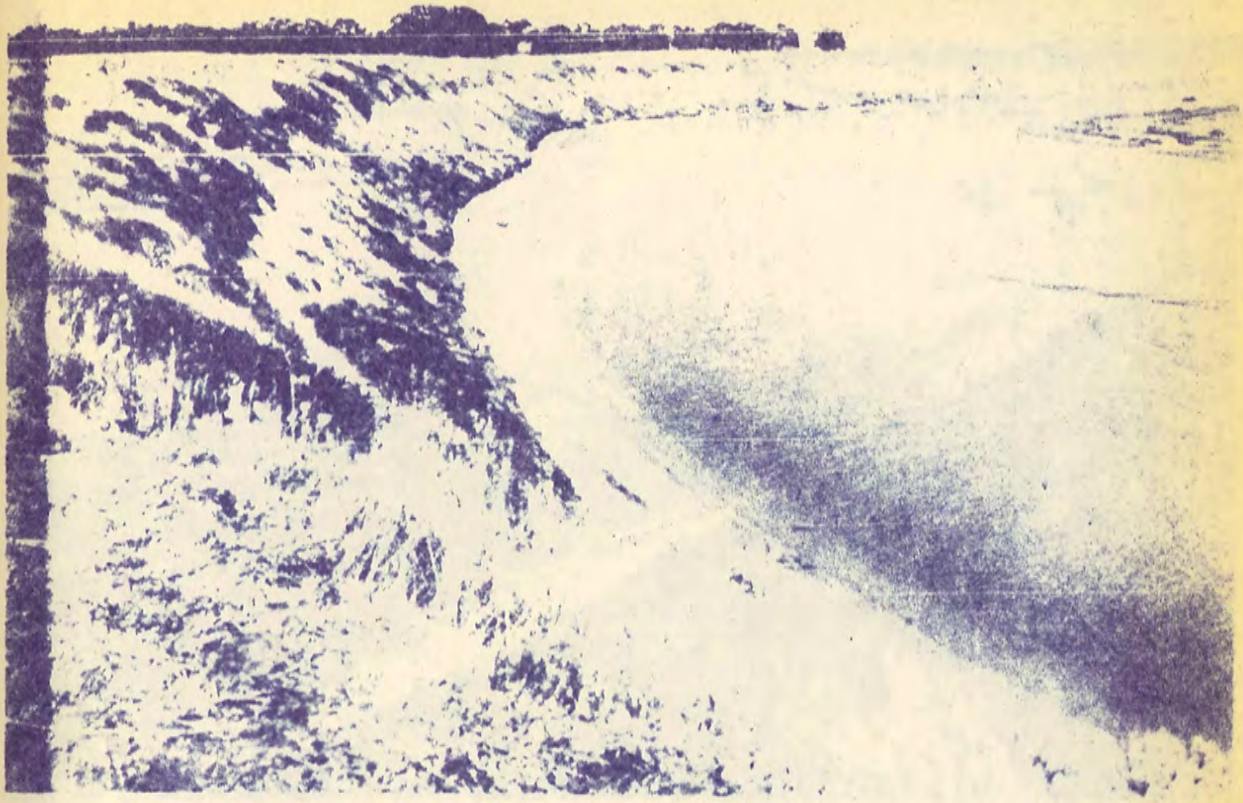
11. Aerial view looking southwesterly at Bay Shores Tract and Lido Island at present 1952. This shows great demand for property in locations where boating and acquatic sports are possible.

DRAWINGS:

12. Plan and profile of proposed bridge and plan of highway connections at west approach to the bridge.

13. General channel dredging lines and elements of development suggested in this report. Variations along the bulkhead lines would vary with the type of development on beach or highland abutting.

14. Perspective, looking northeast, showing possible bridge and apartment hotel development. The hotel site is on the bluff shown in picture 2. This would enhance the beauty of the Newport-Balboa area.



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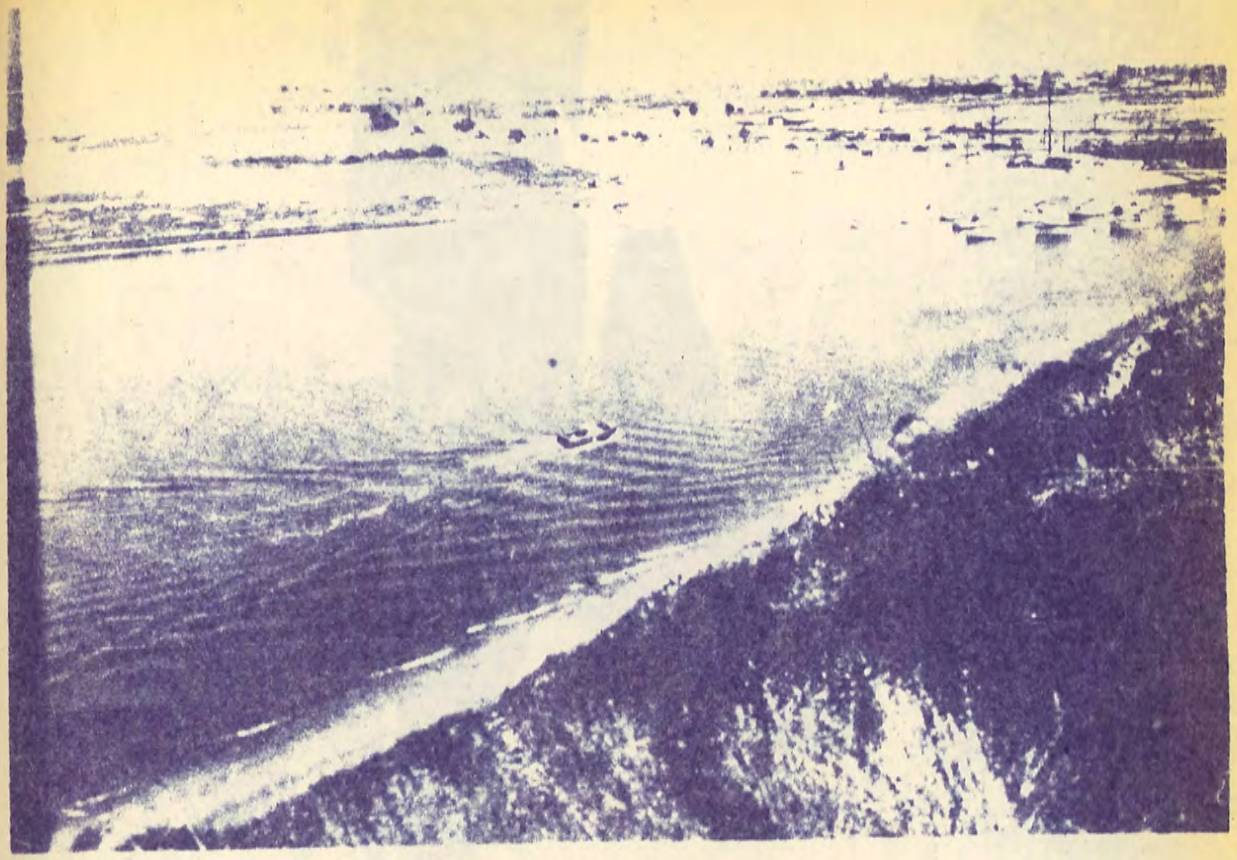

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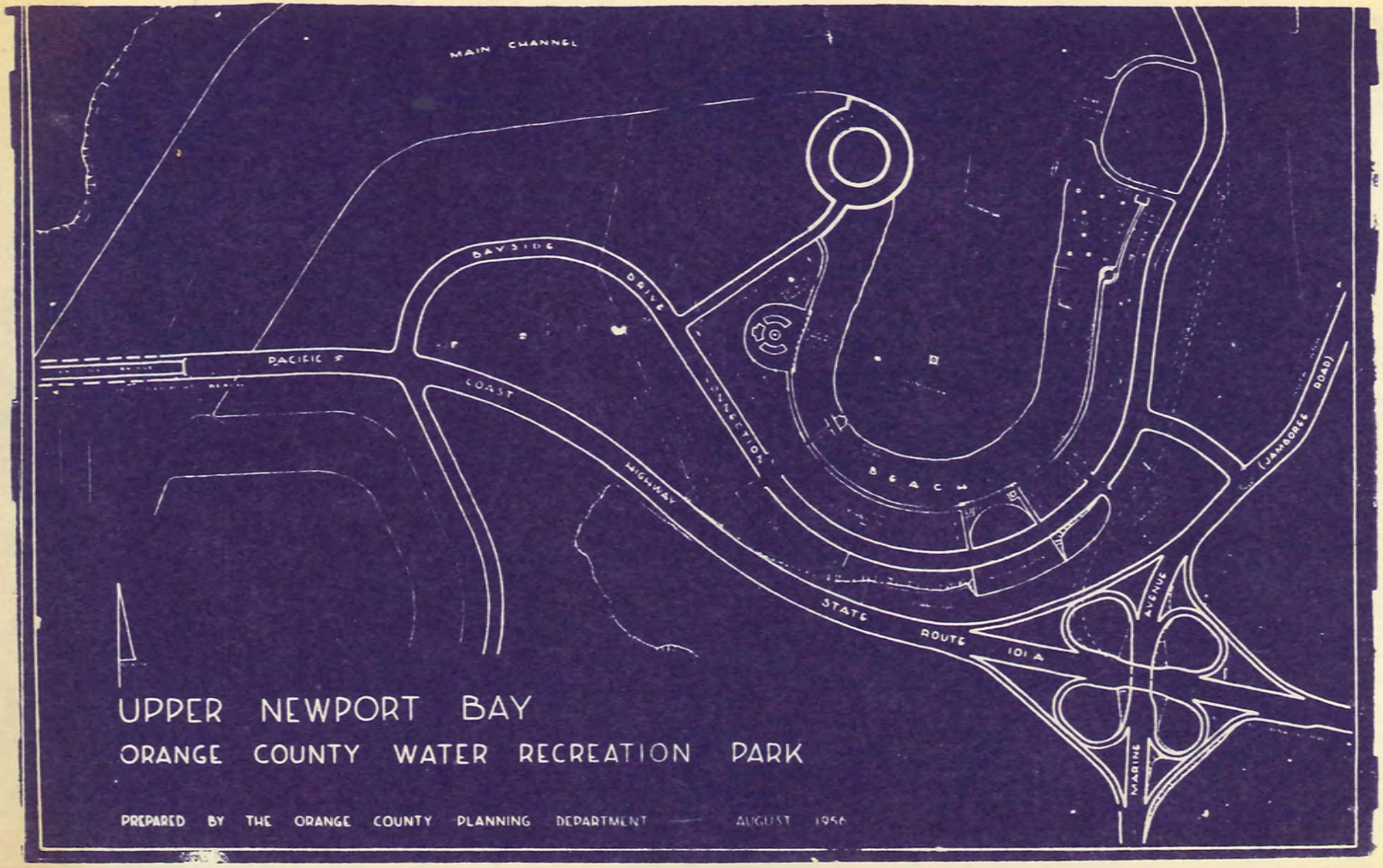
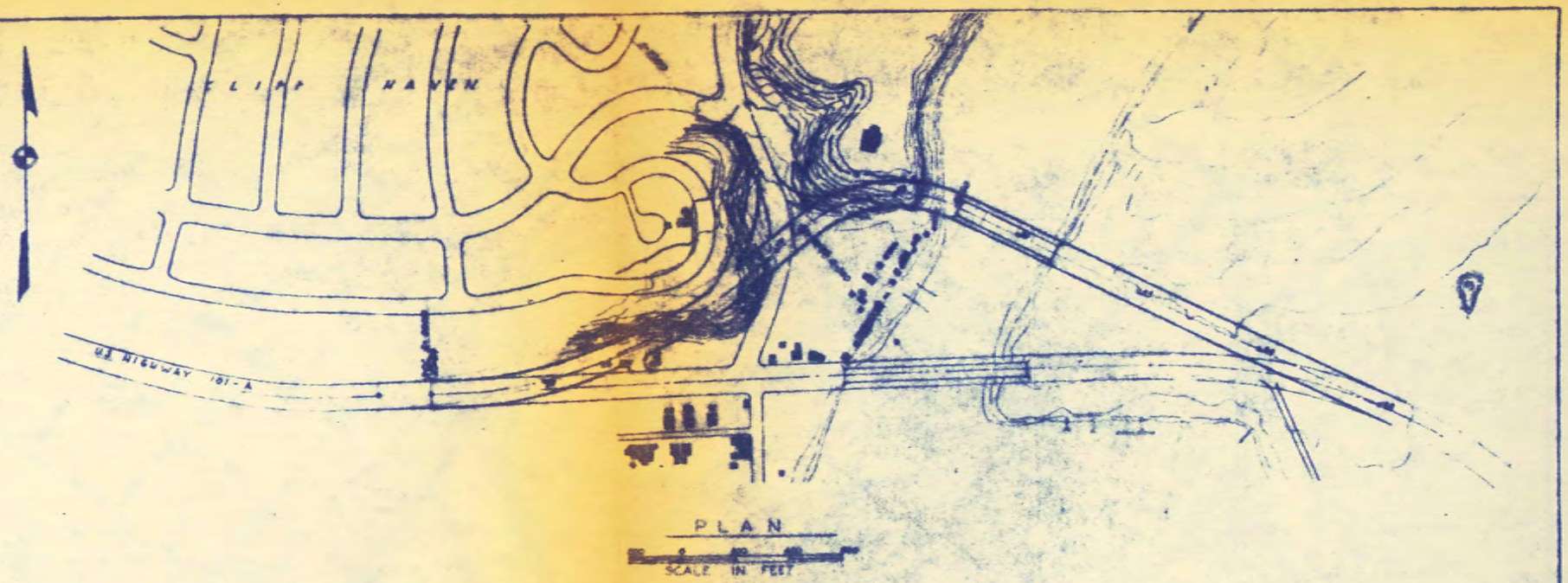
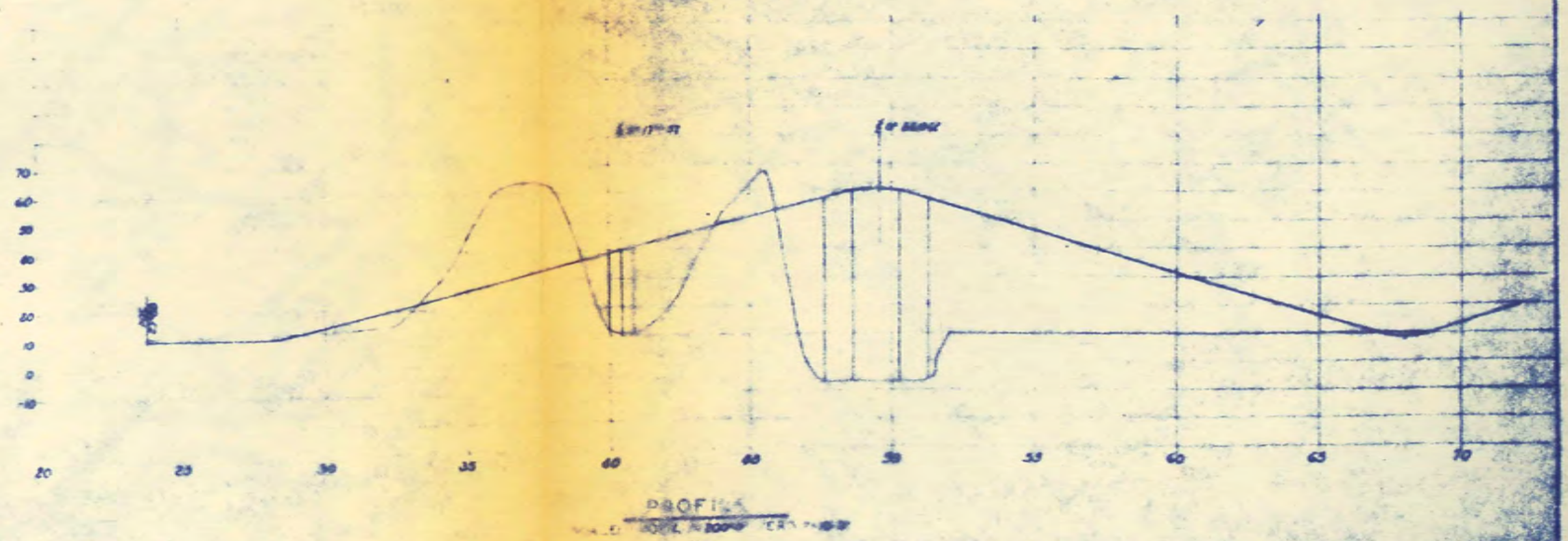
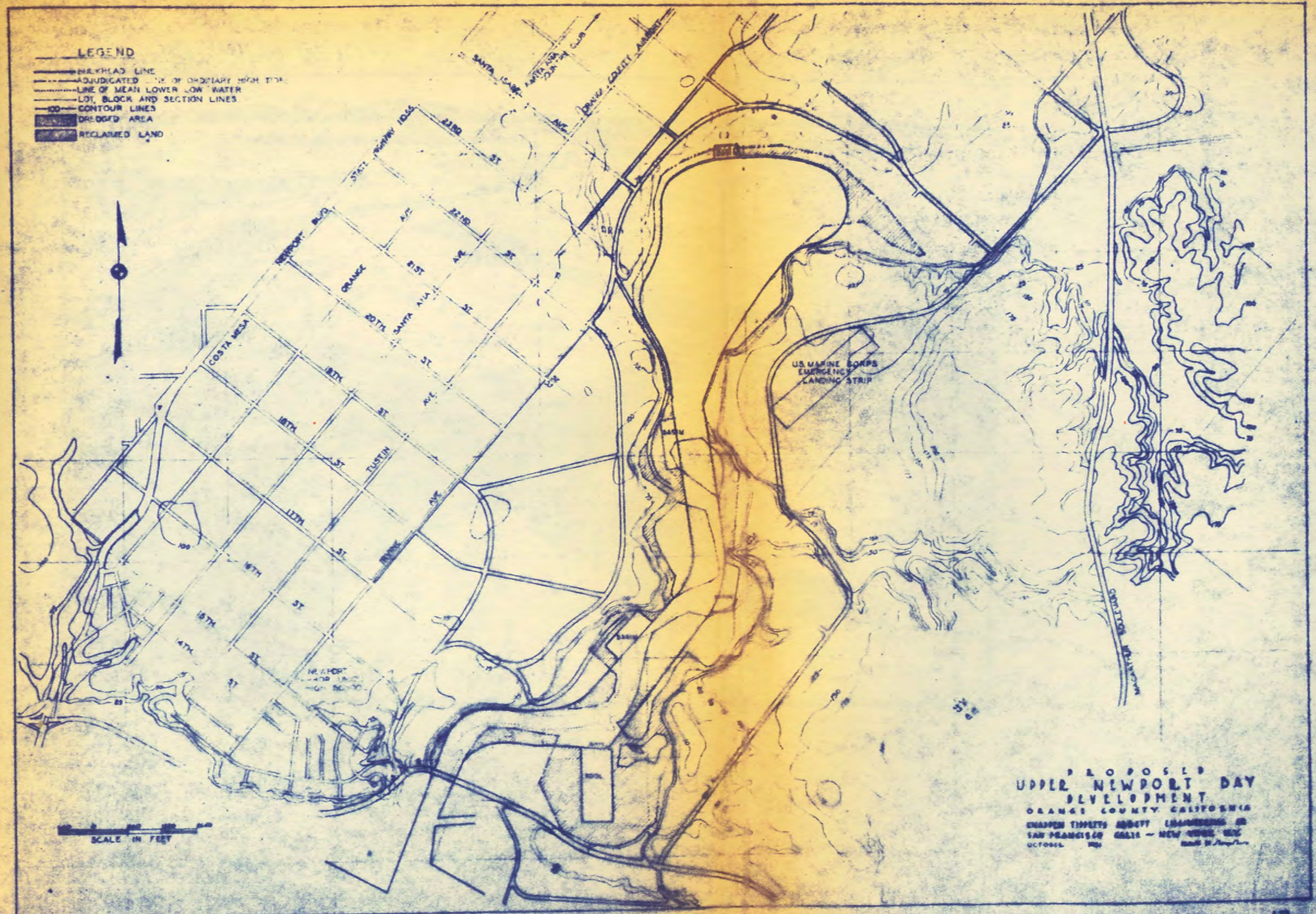
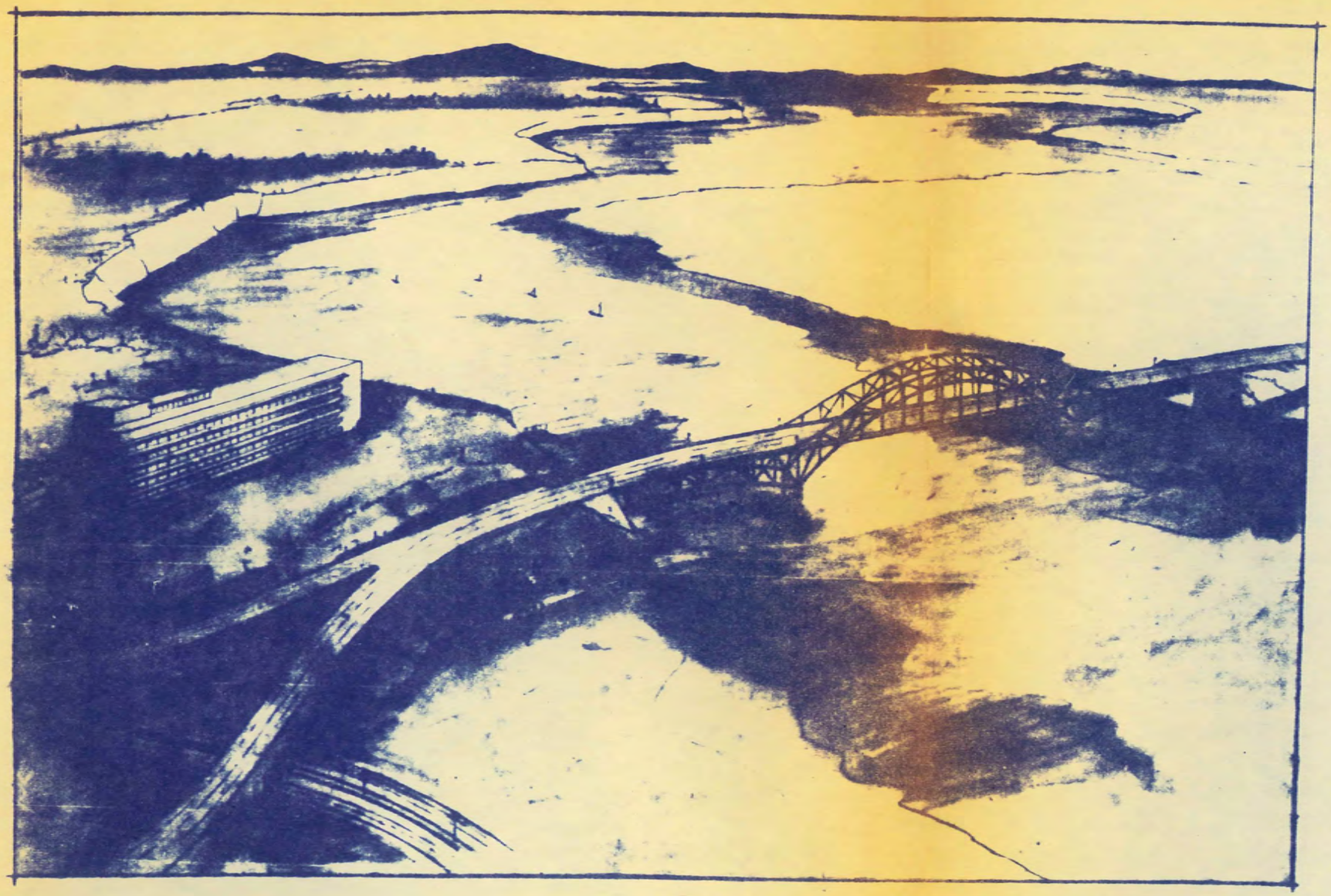

MAIN CHANNEL
BAYSIDE DRIVE
PACIFIC
COAST
HIGHWAY
JUNCTION
BEACH
JAMBOREE ROAD
STATE ROUTE 101A
AVENUE
MARINE
UPPER NEWPORT BAY
ORANGE COUNTY WATER RECREATION PARK
PREPARED BY THE ORANGE COUNTY PLANNING DEPARTMENT — AUGUST 1956





PROPOSED
UPPER NEWPORT BAY
DEVELOPMENT
ORANGE COUNTY, CALIFORNIA
EDWARD TIBBETTS ABBETT ENGINEERING CO.
SAN FRANCISCO, CALIF NEW YORK, N.Y.
OCTOBER 1959


LEGEND
BULKHEAD LINE
ADJUDICATED LINE OF ORDINARY HIGH TIDE
LINE OF MEAN LOWER LOW WATER
LOT, BLOCK AND SECTION LINES
100 CONTOUR LINES
DREDGED AREA
RECLAIMED LAND
SANTA ANA COUNTRY CLUB
ORANGE COUNTY AIRPORT
STATE HIGHWAY ROAD
NEWPORT BLVD.
COSTA MESA
ORANGE
22ND ST
21ST ST
20TH ST
19TH ST
18TH ST
17TH ST
16TH ST
15TH ST
14TH ST
SANTA ANA AVE.
TUSTIN AVE.
IRVINE
U.S. MARINE CORPS EMERGENCY LANDING STRIP
BASIN
SCALE IN FEET
PROPOSED
UPPER NEWPORT BAY
DEVELOPMENT
ORANGE COUNTY, CALIFORNIA



PROPOSED
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DEVELOPMENT
ORANGE COUNTY CALIFORNIA
KNAPPEN TIPPETTS ABBETT ENGINEERING CO
SAN FRANCISCO CALIF - NEW YORK NY
OCTOBER 1951