STUDY OF POTENTIAL TRANSIT SERVICE IMPROVEMENTS FOR THE SOUTH BAY AREA OF LOS ANGELES COUNTY

DRAFT FINAL REPORT

LOS ANGELES COUNTY TRANSPORTATION COMMISSION

MARCH, 1979

PREPARED BY

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ATE MANAGEMENT AND SERVICE CO., INC.

March 30, 1979

Mr. Jerome C. Premo
Executive Director
Los Angeles County
Transportation Commission
311 South Spring Street
Suite 1206
Los Angeles, California 90013

Dear Jerry:

We are pleased to present this draft Final Report of the Study of Potential Transit Service Improvements for the South Bay Area for Los Angeles County.

We are confident that our project team has objectively evaluated the mass transit needs of the South Bay area and has developed an effective and efficient solution to current transit problems.

Additionally, it is hoped that the program of service improvements and institutional adjustments recommended by the report can provide the framework upon which a complete and thorough transit service for South Bay can be developed.

During the course of the project our team was by necessity involved with a great many individuals and institutions both in South Bay and throughout the County. The assistance of these parties was invaluable and we are appreciative of their support for the project.

If we can be of any further assistance in developing, interpreting, or defining any item relative to this project, please do not hesitate to call upon us.

Sincerely,

Philip J. Ringo
President

PJR/lms

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NOTE

The financial projections in this report have, in part, been prepared on the basis of information and assumptions as provided by the Public Transit Operators of Los Angeles County. The consultant has relied on such information and believes that the information and assumptions used constitute a reasonable basis for preparation of the projections. However, it must be recognized that the achievement of any financial and ridership projection is dependent upon the occurrence of future events which cannot be assured and, thus, the actual results achieved may vary from the projections.

* * * *

The terms of the consulting engagement are such that the consultant has no obligation to update this report or to revise the financial projections because of events and transactions occurring subsequent to the date of this report.

* * * *

This Report has been prepared by the consultant in cooperation with the Los Angeles County Transportation Commission, and the Southern California Rapid Transit District and the municipalities and municipal transit operations of the South Bay area of Los Angeles County. The opinions, findings and conclusions expressed or implied in this document are those of the consultant and not necessarily those of the L.A.C.T.C., S.C.R.T.D., or the municipal transit operations or the cities of the South Bay area.

I. EXECUTIVE SUMMARY

I. EXECUTIVE SUMMARY

In November of 1978, as a follow-up to the previously completed performance audit project, ATE Management and Service Company of Cincinnati, Ohio, began a study to identify potential transit service improvements for the South Bay area of Los Angeles County.

The principal objectives of the project were to: a) select the most appropriate organizational and institutional alternatives for service in South Bay; b) develop a reasonably detailed on-street transit system design for the area; c) assess the maintenance requirements of such service improvements; and d) estimate the potential impact of the proposed improvements on such key elements as operating cost, revenue, ridership, and required subsidy levels.

A definitive set of criteria was established and used during the course of the project. The criteria included specific guidelines for route and service adjustments, project procedures, financial restrictions, and institutional and maintenance solutions.

Criteria for service adjustments included: not altering routes unless economies can be realized or the quality of the service improved, priority given to existing riders over potential riders, service cannot require substantially greater cost than the status quo, regional routes should be extended to their most "natural terminus", service levels are determined by logical transit factors only and, recommendations must be compatible with a workable maintenance solution.

Institutional criteria included: the alternative selected will be the one which can best accommodate the recommended transit system and not vice versa, limitations of current State laws shall not be a consideration and no presumptions for or against the existing institutional structure should be assumed in advance.

Additional general criteria were: existing data sources will be primarily utilized with only selective development of new data and, modifications to the recommendations may be necessary because of future maintenance and garage site limitations.

Several procedures were followed during the course of evaluating current transit needs and system capabilities. Current schedules and maps were selected and evaluated to familiarize participants with the existing route structure. A Comprehensive Operational Analysis (COA) was performed on the current local transit service in South Bay in order to identify where transit patrons are boarding and alighting. Geographic and demographic analyses were performed to assess the location and passenger demand for transit services. A special effort was made to evaluate existing literature, data, and previous studies for their possible applicability to this project.

COA

Public employees, community leaders, and other activity centers in South Bay were contacted in an effort to gain a better understanding of the area's needs. Contact was also made with representatives of the major employment generators and other activity centers in South Bay.

A review and assessment of the current maintenance facilities available in South Bay was also conducted. As a specific task of this project, the Coldwell

Banker Management Corporation was subcontracted by ATE to perform an evaluation of possible site locations for future transit maintenance facilities.

Current Status of Transit in South Bay

Presently, fixed route transit service in the South Bay area is provided by four transit operators. Local transit service is provided by municipal operations directed by the cities of Torrance, Gardena and Hermosa Beach. Regional service is currently provided by the Southern California Rapid Transit District (SCRTD).

The Torrance Transit System operates five transit routes, two of which provide express-type service from the South Bay area to downtown Los Angeles. Another route provides service to Long Beach. Torrance also operates a Shopper's Special and a local shuttle service.

The City of Gardena operates four transit routes, one of which links Gardena with downtown Los Angeles, while another provides service to the city of Compton. The City of Hermosa Beach operates mini-bus service on two fixed route transit loops which provide service throughout most of that city.

SCRTD operates an extensive network of 32 regional routes throughout the South Bay area. This service provides access to all municipalities within South Bay including Long Beach, South Central Los Angeles, Santa Monica, Hollywood and downtown Los Angeles. Figure 1 depicts the current SCRTD South Bay service while Figure 2 shows the existing transit service provided by the municipal operators.

Currently, there is also a wide variety of special transportation service provided in the South Bay area. SCRTD operates a special commuter express service called BEEP, which is a federally funded demonstration program. In addition, specialized transportation service for the elderly and handicapped citizens in South Bay is now provided by eight separate operators financed by eight different cities within South Bay. Four of these services operate their own minibuses or vans while the remaining four have contracted with local taxi operations.

Our evaluation indicates that demand for mass transit services in South Bay is substantial. However, current ridership levels on existing routes are significantly below the average ridership encountered throughout the rest of the county. As an example, while South Bay is the home of about 13% of the population of Los Angeles County, it only generates about 8.5% of the transit rides now made in the county. Commuter work trips between South Bay locations and downtown Los Angeles are currently the most popular transit travel trips for South Bay, indicating a strong desire by many residents to travel to locations beyond the immediate South Bay area. However, there is a substantial need for transit travel within South Bay itself.

Each transit operation in South Bay currently operates under its own fare structure, has its own administrative policies, and operates its own maintenance facility. SCRTD maintains most of its South Bay vehicles from a temporary servicing site at 190th Street and the Harbor Freeway; the municipal operators service their vehicles from their respective city maintenance garages.

FIGURE 1

EXISTING SCRTD ROUTES

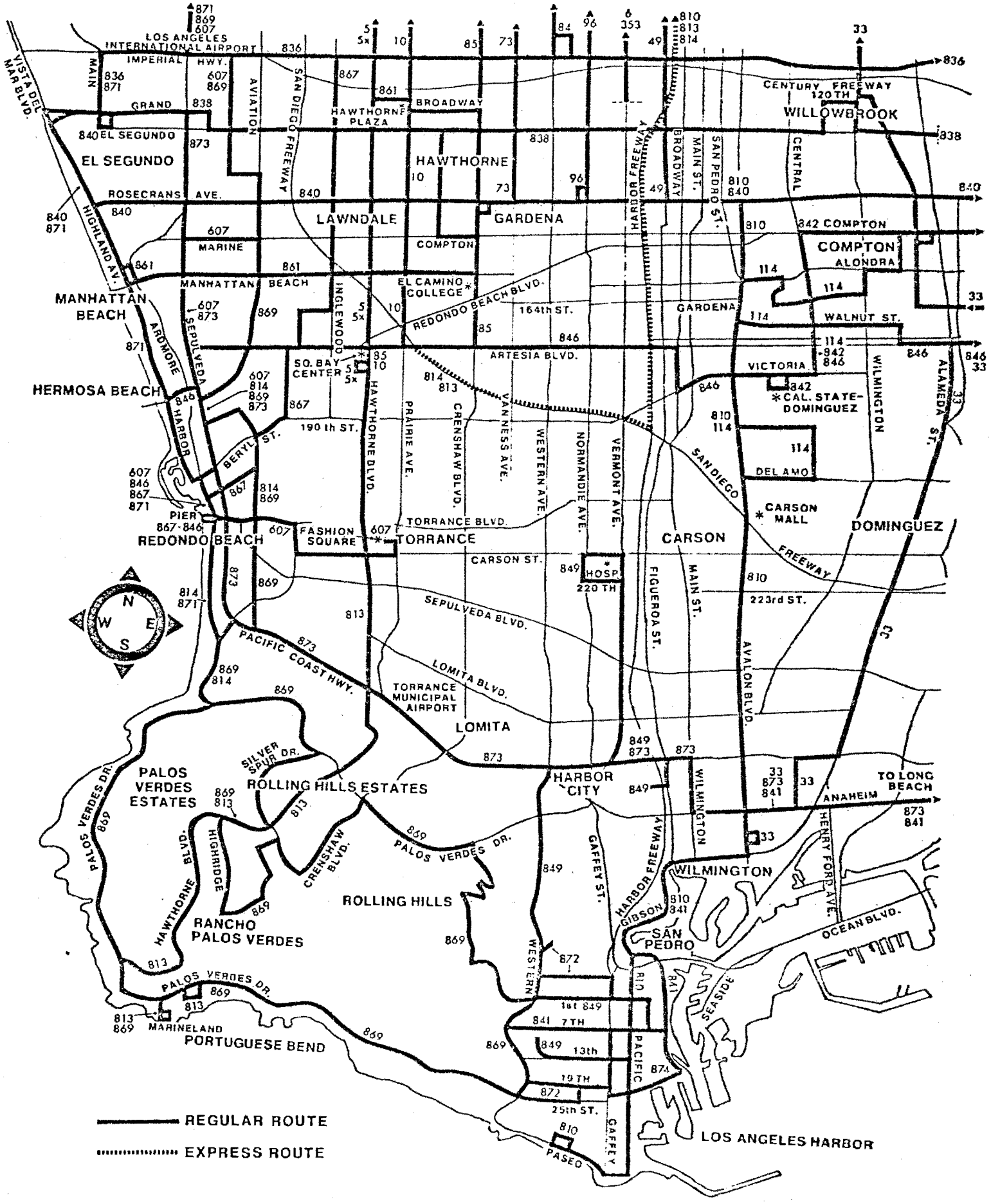
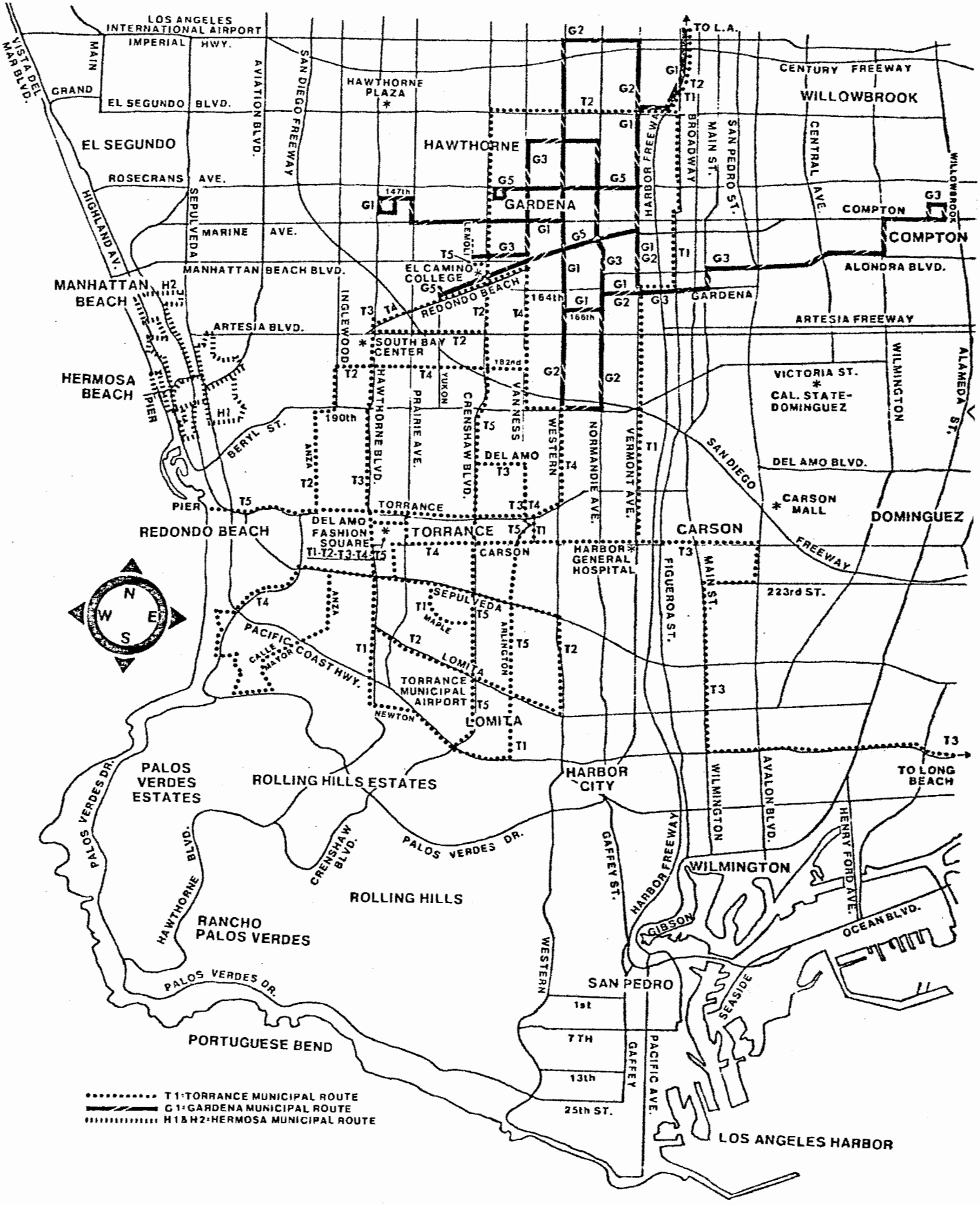


FIGURE 2

EXISTING MUNICIPAL ROUTES



Service Analysis and Recommendations

Service inadequacies and deficiencies became evident during the course of the transit analysis of the routes and schedules in South Bay. These included: 1) a lack of coordination between transit service systems; 2) inconvenient service due to political boundaries and restricted franchise areas; 3) service duplication; and 4) an inconsistent quality of service.

To correct these deficiencies and to provide a more effective transit service network for the South Bay region, a series of transit improvement recommendations have been developed.

To maximize operational economies it is recommended that much service of a local nature within South Bay as well as existing locally operated express service to downtown Los Angeles should be operated by a unified local transit carrier. This operator should provide service along seven routes which could be operated more economically by a local carrier than by the regional provider.

This local provider, only for the purposes of this project, has been referred to as the South Bay Area Transit System (SBATS). If implemented, the SBATS service would cover the operation of the three present express routes to Los Angeles now operated by Torrance and Gardena via slightly modified routes. SBATS would also operate four new local routes for the South Bay area which have, in this report, been referred to as SBATS routes numbers 4, 5, 6, and 7.

The new SBATS route would operate from the Hollywood-Riviera area of Torrance to the City of Gardena via Del Amo Fashion Square and El Camino College. SBATS Route 5 would provide service between Redondo Pier and the City of Lomita via Torrance Blvd., Del Amo Fashion Square, the old Torrance Terminal and Arlington Avenue. The new SBATS Route 6 meanwhile would provide service between the Redondo Pier and El Camino College via Torrance Blvd., the old Torrance Terminal, and Western Avenue. SBATS Route 7 would operate in the same manner as does the current Gardena Route 2, in a loop fashion on Western and Vermont Avenues between Imperial and 190th Street. Service on that route, however, would operate with a 60 minute headway rather than its current 30 minute frequency. The completed proposed SBATS system is shown in Figure 3. It is also recommended that an improved and expanded regional transit network for South Bay developed by this project should be implemented in order to maximize overall transit accessibility for the residents of the area. In order to accomplish this, existing SCRTD routes should be extended to their most natural and beneficial transit terminus. Previous political boundaries and restricted franchise areas should be disregarded. Consequently, it is recommended that the following SCRTD routes be extended:

Route 5 - Hawthorne Blvd. - to downtown Long Beach via route of current Torrance Route 3

Route 6 - Vermont - (or Route 353) extended to city of Carson via Vermont, Victoria and Avalon

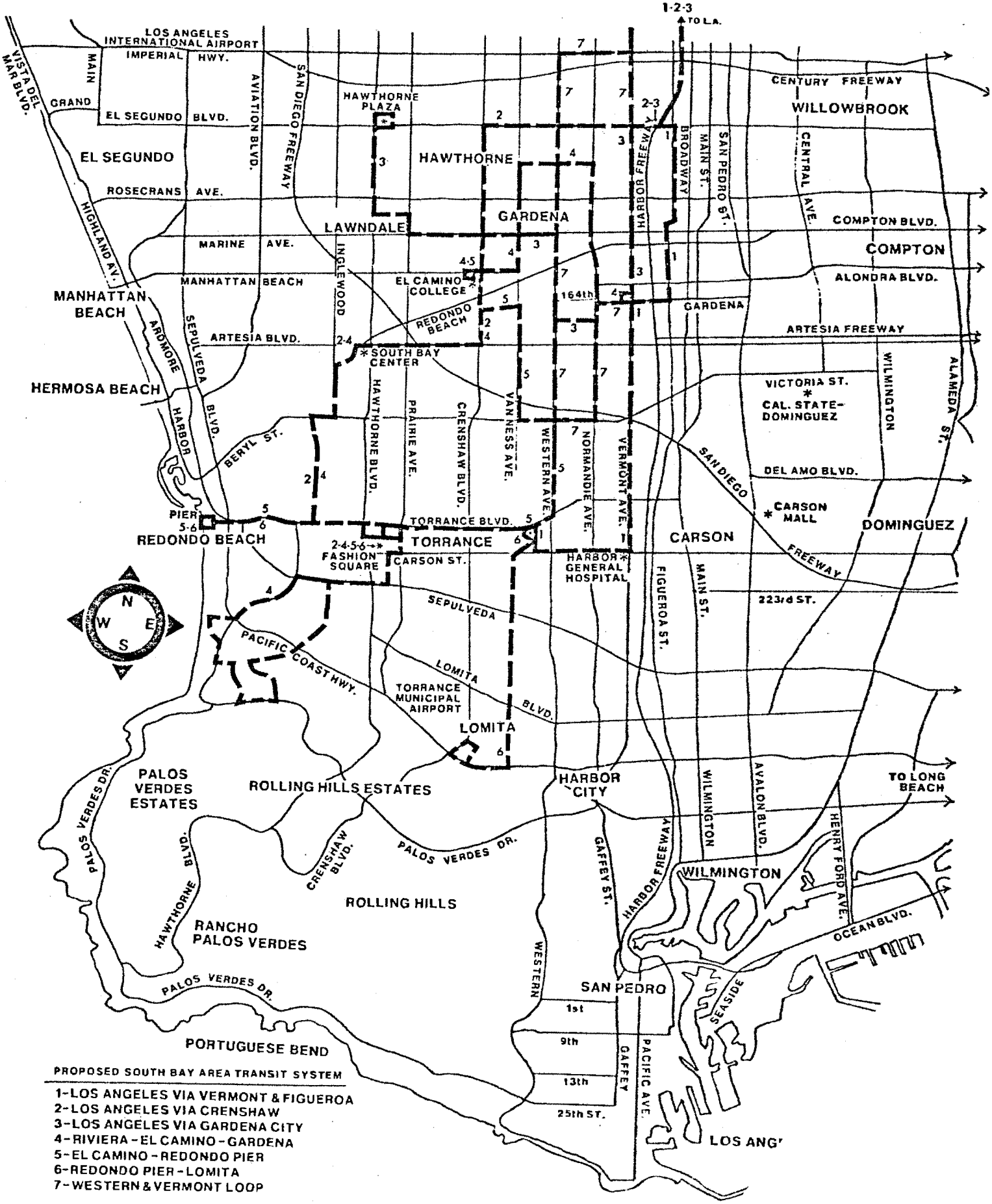
Route 84 - Western - to Kaiser Medical Center via Western and PCH

Route 85 - Crenshaw - to Pacific Coast Highway

Route 96 - Normandie - to Harbor General Hospital

FIGURE 3

PROPOSED SOUTH BAY AREA TRANSIT SYSTEM



Route 114 - Lynwood - to El Camino College

Route 607 - Redondo Beach - Torrance - to Lomita

Route 849 - Harbor City - San Pedro - to City of Compton via Carson Mall and Cal State-Dominguez Hills

This extended SCRTD regional network is depicted in Figure 4.

Facility Requirements

In order to accommodate this new service structure, it is recommended that two new maintenance facilities be constructed in the South Bay area. One facility, supporting the proposed SBATS system, should be capable of accommodating about 30 to 35 regular transit vehicles as well as 10 to 15 para-transit or demand responsive vehicles. A desirable and available site for the construction of this facility would be the parcel of land located just northwest of the present Torrance Civic Center complex. Meanwhile, a 200 to 225 bus transit facility should be constructed for the expanded SCRTD service for South Bay. Twelve possible sites for this facility were identified by the Coldwell Banker study (included as an appendix in this report). For general availability of the real estate and overall operational economy, site number 2 (off Western Avenue between Torrance Blvd. and Del Amo Blvd.), number 9 (located between Vermont and the Harbor Freeway just south of the San Diego Freeway) and 11 (loated on the north side of Del Amo between Vermont and Normandie) appear to be the most desirable. The marketing and public relations for SCRTD in the South Bay area should also be directed from this new facility site, or, from some other appropriate South Bay location.

In order to provide more effective transportation service for the elderly and handicapped citizens of South Bay, it is also recommended that existing specialized transportation services in South Bay be combined and coordinated into a single elderly and handicapped service. This service could operate most effectively from the proposed new local transit facility which would accommodate the SBATS service. It is recommended that this unified elderly and handicapped service would be operated by SBATS which would operate the special vehicles now operated by four South Bay communities and could coordinate the availability and dispatching of the special services now provided by contracted taxi operators.

Fare Policy Coordination in South Bay

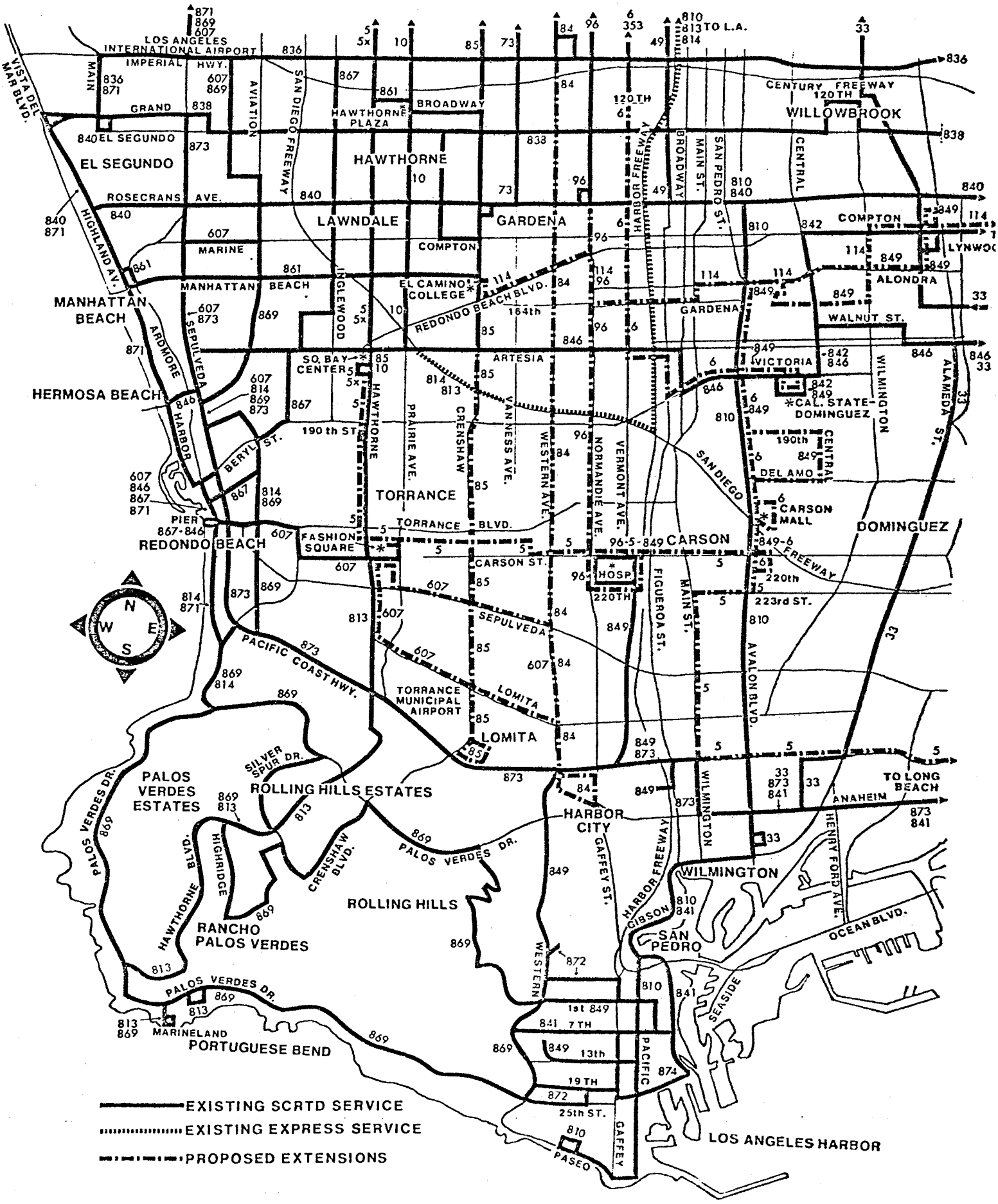
While the individual fare structures of current transit operators in South Bay reflect current local policy, these different policies create a confusing tariff for the general public within the subregion. As long as multiple prices are available on the marketplace, some problems will inevitably occur. Consequently, it is a basic recommendation that the Los Angeles County Transportation Commission strive toward mandating a uniform base fare policy for all of the South Bay area. In the short run, it may be appropriate to initiate a phased coordination of the various fare policies.

Impact on South Bay Ridership

The potential impact of these service improvement recommendations on overall operating cost, revenue, and ridership are substantial. The expanded SCRTD regional system should attract an additional 1,509,000 riders annually. The

FIGURE 4

PROPOSED SCRTD SERVICE



new SBATS service meanwhile could be expected to attract 2,510,000 riders or about 849,000 rides less than what the combined municipal operators are currently carrying annually. Overall, however, when combined with the expected increase in SCRTD ridership, there would be a net increase in total transit ridership in South Bay of more than 660,000 passengers annually. Additionally, ridership can realistically be expected to continue to increase in future years because of the beneficial effect that this more complete, more accessible, South Bay service should have on surrounding transit services. Complete ridership projections for the proposed new SBATS service is shown and compared to existing municipal ridership in Table 1. Projected ridership increases and decreases for modifications to current SCRTD routes are shown in Table 2.

Cost and Revenue Impact

Several operational economies can also be realized through this service restructuring. The SCRTD regional service expansion should require an additional 17 peak hour vehicles and approximately 65,000 hours of additional operating service annually. The SBATS service meanwhile should have operational requirements about equal to that which is currently required of the Torrance Transit System operation alone. SBATS would require from 19 to 26 peak hour vehicles (with and without school trippers) and approximately 86,130 hours of operation annually.

Overall, these service improvements should produce a net reduction in total operating cost of about $72,000 annually. That, coupled with the projected increases in farebox revenue of about $314,300 generated by the additional ridership ($178,200) and modifications to the fare structure ($136,100), can be expected to produce a total reduction in the transit operating deficit for South Bay of as much as $386,300 annually. This savings could be realized even though the quality of transit service would be vastly improved and as many as 660,000 more transit patrons could be expected to utilize the service.

It should also be noted that the percentage of operating costs returned through the farebox for the new SBATS service should be in the vicinity of 45% to 50% which is higher than the percentage now returned by any of the current South Bay local operators.

Potential Effect on Individual Communities

It is important to note the potential effect these recommended service improvements might have on the various individual cities and communities of South Bay. Below is a summary for each South Bay community describing how the recommended service changes in this report could be expected to impact public transportation in that area. Collectively, however, it appears appropriate to note the benefit of fuel savings which would be realized by the entire county. While increasing bus miles only minimally, the increased transit patronage from this plan could reduce automobile mileage in South Bay by 4,620,000 miles annually and save about 350,000 gallons of gasoline each year.

Torrance

Under the proposed system, the City of Torrance would no longer operate its own transit system, however, it is recommended that the new SBATS service be headquartered in that city. Consequently, five of the proposed seven routes which

TABLE 1

PROJECTED RIDERSHIP CHANGES

	Current Annual Ridership (Municipal Operators)	Projected Annual Ridership (SBATS Service)	Percent Change
TORRANCE ROUTES			
Route #1 - Los Angeles	538,000	457,000	- 15.1%
Route #2 - Los Angeles	348,000	307,000	- 11.8%
Route #3 - Torrance - Long Beach	487,000	-0-	-100.0%
Route #4 - Riviera - El Camino	122,000	-0-	-100.0%
Route #5 - Redondo, Lomita, El Camino	250,000	-0-	-100.0%
Shopper's Special	40,000	-0-	-100.0%
HERMOSA BEACH ROUTE			
Local Double Loop	16,000	-0-	-100.0%
GARDENA ROUTES			
Route #1 - Los Angeles	535,000	596,000	+ 11.4%
Route #2 - Western - Vermont Loop	486,000	236,000	- 51.4%
Route #3 - Gardena - Compton	312,000	-0-	-100.0%
Route #5 - Redondo - Rosecrans	60,000	-0-	-100.0%
Extra School Oriented Service	165,000	165,000	0%
NEW SBATS LOCAL ROUTES			
Local #4 - Riviera - El Camino - Gardena	-0-	295,000	+100.0%
Local #5 - Redondo Pier - Lomita	-0-	244,000	+100.0%
Local #6 - El Camino - Redondo Pier	-0-	210,000	+100.0%
Total Local Operations	3,359,000	2,510,000	- 25.3%

TABLE 2

PROJECTED RIDERSHIP CHANGES

SCRTD Ridership Increases (Decreases)

ROUTE		TYPE OF CHANGE	ANNUAL RIDERSHIP INCREASE (DECREASE)	PERCENT CHANGE
#5	Hawthorne Blvd.	Extension to L.B.	508,000	+ 8.1%
#6	Vermont	Extension to Carson	68,000	+ 1.0%
#84	Western	Extension to P.C.H.	255,000	+ 3.7%
#85	Crenshaw	Extension to P.C.H.	141,000	+ 1.7%
#96	Normandie	Extension to Harbor Gen.	157,000	+ 4.7%
#114	Lynwood - Carson	Cutback from Carson	(74,000)	+ 37.1%
#114	Lynwood - Carson	Extension to El Camino	183,000	
#607	L.A. - Del Amo F.S.	Extension to Lomita	98,000	+ 6.3%
#849	San Pedro - Harbor Gen.	Carson - Compton Ext.	173,000	+ 16.1%
TOTAL NET INCREASE IN SCRTD RIDERSHIP (IN SOUTH BAY)			1,509,000	+ 9.3%
TOTAL NET INCREASE IN SOUTH BAY TRANSIT RIDERSHIP			660,000	+ 3.4%

APPROXIMATE NET INCREASE IN ANNUAL FAREBOX REVENUE FOR ALL SOUTH BAY SERVICE =

$178,200 - Ridership Increases
$136,100 - Fare Changes

$314,300 - Total

SBATS would operate would provide transportation service for various sections of the City of Torrance. Meanwhile, the local financial burden, which the City of Torrance is currently and potentially exposed to, would be significantly lessened by the operation of an area wide local service which could be funded by contributions from the other local South Bay cities also benefitting from SBATS service.

Torrance residents would be exposed to a vastly improved transportation service network because of this reorganization. The extension of several SCRTD regional routes into the Torrance community would provide direct one bus access to numerous major generators in other parts of South Bay as well as locations outside the region. The extension of service south along Western Avenue and Crenshaw Blvd. should greatly improve overall transit accessibility for residents of western Torrance. Additionally, the extension of SCRTD Route 5 provides direct access to the Lawndale, Hawthorne and northern Hawthorne Blvd. areas for Torrance residents. The addition of the Lomita loop onto the SCRTD Route 607 provides a new connection between southern Torrance and the beach cities. The newly created local routes should provide faster, more direct service to El Camino College and Redondo Pier as well as more effectively serving the popular Del Amo Fashion Square and the old Torrance Terminal.

Overall, it is projected that these recommended service revisions should generate an additional 172,000 rides annually from the Torrance area while substantially reducing the necessity to transfer in order to reach many desired final destinations. Finally, the elimination of several of the existing circuitous routings now serving the City of Torrance should greatly reduce average trip time for local travel and should generally make public transit service in the City of Torrance much more attractive.

Gardena

Under the proposed system, the City of Gardena would no longer operate its own local transit system. However, service to this community would be vastly improved with the implementation of the recommended service. Currently, the necessity of having to transfer in order to travel to most major generators beyond the Gardena city limits is a great deterrent to transit ridership. Under the recommended program, several SCRTD routes, which currently terminate at or near the Gardena city limits, would be extended southward to provide more direct service for Gardena residents while minimizing the inconvenience of transferring. With the extension of SCRTD routes 6, 96, 84, and 85, convenient, through service would be made available to many Gardena residents. Additionally, much of the existing local transit routing would be preserved through the continued operation of what is currently Gardena Routes 1 and 2 and through the creation of the new SBATS Route 5. In addition, service between Compton and El Camino College would be made much more convenient through a new direct routing of SCRTD Route 114. Gardena residents would also have direct, no transfer service to Hawthorne Plaza through the Gardena Route 1 extension. Overall, Gardena can expect to experience an increase in transit ridership of in excess of 50,000 passengers per year. Perhaps more importantly, a potential severe financial burden for the City would be lessened considerably through the operation of the recommended SBATS service as opposed to the current Gardena municipal operation. The potential joint funding of SBATS by Gardena and several other communities should substantially reduce Gardena's potential future local contributions required in order to operate such transit service.

Hermosa Beach

It has been recommended that the mini-bus circulatory route now operated by the City of Hermosa Beach be discontinued because of low productivity. The creation of a new unified elderly and handicapped service available to all of South Bay should be adequate to meet the transportation needs of the Hermosa Beach community without the necessity of operating the circulator mini-bus. The recommended expanded service area for SCRTD Route 607 could provide greater accessibility to some portions of Torrance and Lomita for Hermosa Beach residents.

Redondo Beach

Redondo Beach is currently effectively served by several SCRTD routes which connect most of the Redondo Beach community with downtown Los Angeles, Long Beach, and the rest of South Bay. However, improved local service to be operated by SBATS could make several areas of South Bay more accessible to Redondo Beach citizens. A recommended routing for SBATS Route 4 could provide a faster more direct access to El Camino College for the residents of northeast Redondo Beach. Access to Del Amo Fashion Square meanwhile, via Torrance Blvd., would also be vastly improved. Consequently, an additional 48,000 transit riders per year can be expected to be attracted from the Redondo Beach area. The expanded areawide demand-responsive service would also be of great benefit to Redondo Beach residents by making several potential trip destinations, which are currently beyond existing demand responsive service areas, more accessible.

Lomita

The City of Lomita was identified by the study team as being one of the most under-served areas of South Bay. Fortunately, the recommended service improvements should greatly improve the quality of mass transit service available to Lomita residents. The extension of three SCRTD routes from their current termini to points in or near the City of Lomita should greatly increase overall transit accessibility for this area. The extension of SCRTD Route 84 south on Western Avenue and the extension of SCRTD Route 85 south on Crenshaw Blvd., both terminating at Rolling Hills Plaza, would provide direct north-south access to other parts of South Bay, and beyond, for Lomita residents. In addition, the extension of SCRTD Route 607 into the Lomita area would provide direct, no transfer service for Lomita residents to beach city areas, the Aviation Blvd. area, and Los Angeles International Airport. The recommended routing for SBATS Route 5 could provide a faster, more direct service for Lomita residents to downtown Torrance, Del Amo Fashion Square, and the Redondo Pier. In summary, the service recommendations would greatly improve transit accessibility in the Lomita area. It is anticipated that in excess of 92,000 additional transit rides per year would be attracted from the City of Lomita because of the service improvements.

Hawthorne

The City of Hawthorne presently is crisscrossed by a series of SCRTD regional routes. Effective service is currently provided for the Inglewood, Hawthorne, Prairie and Crenshaw north-south corridors, as well as the Imperial, El Segundo and Rosecrans east-west corridors. However, two major improvements to transit service in the Hawthorne area are recommended. The extension of what currently is Gardena Route 1 from its current terminus north on Hawthorne Blvd.

to the Hawthorne Plaza should improve service to the Gardena area and Hawthorne Mall for Hawthorne residents. The extension of SCRTD Route 5 from South Bay Center to Del Amo Fashion Square, and further to downtown Long Beach, should open up a large part of the Central South Bay area to Hawthorne residents, while the extension of Gardena Route 1 (SBATS Route 3) to Hawthorne Plaza would make that shopping complex directly accessible for Gardena residents. Overall, it is expected that the improved transit service will attract approximately 47,000 additional Hawthorne area transit riders each year. The City of Hawthorne also could benefit considerably through the recommended South Bay unified elderly and handicapped service which could greatly broaden the service area available for such residents of the Hawthorne area.

Lawndale

The City of Lawndale also currently has effective SCRTD regional service operating on most of the major corridors in the city. Two recommended route improvements, however, would have a beneficial effect on Lawndale residents. The recommended new SBATS Route 4 operating from Hollywood-Riviera to El Camino College to Gardena would provide access to El Camino College and Del Amo Fashion Square for residents of the southern portion of the City of Lawndale. Residents of northern Lawndale would have increased accessibility to the Hawthorne Plaza shopping area, as well as to the City of Gardena because of the recommended extension of the current Gardena Route 1. Overall, these service improvements should attract about 12,000 additional Lawndale area riders per year.

Carson

Considering its population is nearing 100,000, the City of Carson is the most under-served community in the South Bay area. To correct this problem, several service improvements recommended for the proposed service network would greatly benefit the residents of the Carson area. The extension of SCRTD Route 6 from its current terminus north of Gardena, should open transit horizons for Carson residents. It is recommended that Route 6 be extended south on Vermont to Victoria to Avalon, through the Carson Mall, and continuing south past the Civic Center complex to Carson Street. This route extension would provide accessibility to the Carson Mall, the Gardena area and numerous transfer locations for Carson residents. It is recommended that SCRTD Route 849, which currently terminates at Harbor General Hospital, be extended to serve the Carson area. This service would link Carson residents with such potentially important generators as Harbor General Hospital, Los Angeles Harbor College, Carson Mall, San Pedro, Cal State-Dominguez Hills, and the City of Compton. Carson residents should also benefit from the extension of SCRTD Route 5 to assume what is currently operated as Torrance Route 3 to Long Beach. This extension would provide transfer-free access to the northern Hawthorne Blvd. area. In summary, it is anticipated that the service improvements should generate more than 108,000 more rides per year from the Carson area than what is now experienced.

El Segundo

The El Segundo area is presently adequately served by several SCRTD regionally oriented routes. Consequently, no major service improvements are recommended for that area. However, El Segundo area residents could potentially benefit from the route extension recommended for SCRTD Route 607. That

extension could provide direct access for El Segundo residents to a larger portion of the Cities of Torrance and Lomita. Additionally, the recommended unified elderly and handicapped service for South Bay could greatly increase accessibility for El Segundo residents in need of that type of service.

Palos Verdes Peninsula Area

The Palos Verdes community, being vast in area and topographically rugged, poses numerous problems for mass transportation service. This, combined with high median family income and automobile availability makes public transportation on the peninsula unproductive. Past attempts to provide this area with effective fixed route transit service have been met with poor patronage by peninsula residents. Consequently, the existing level of service now provided by SCRTD appears to meet existing demand. Therefore, no additional fixed route service improvements are recommended for the Palos Verdes Peninsula at this time. However, the recommended special demand responsive service for elderly and handicapped needs could provide an effective means for meeting future Palos Verdes Peninsula transportation needs.

San Pedro

The San Pedro area has experienced numerous fixed route service changes over the past four years. The current local service routings have been designed by the San Pedro community and appear to be operating effectively. Consequently, no changes in the current local service now provided to the San Pedro community are recommended at this time. However, the extension of Route 849 from its current terminus at Harbor General Hospital into the Carson area could generate additional rides from the San Pedro area by making such generators as Carson Mall and Cal State-Dominguez Hills accessible to residents without the necessity of a transfer. Because of this improved service, it is projected that approximately 15,000 additional rides would be generated from the San Pedro area each year.

Manhattan Beach

Manhattan Beach is currently effectively served by existing SCRTD regional routes. No major service improvements are recommended for the Manhattan Beach area at this time. The expanded service areas of SCRTD Route 607 could, however, increase accessibility to the south Torrance and Lomita areas for Manhattan Beach residents. Additionally, the creation of a South Bay area-wide demand responsive service for the elderly and handicapped could greatly expand the service available to elderly and handicapped residents of Manhattan Beach.

Harbor City

Harbor City area residents could benefit greatly from the recommended service improvements. The extension of three SCRTD routes, 84, 607, and 849, could significantly improve the accessibility of Harbor City residents to other sections of the South Bay community. The extension of Route 84 on Western Avenue provides an effective link to Gardena and points north for Harbor City residents. The extension of Route 849 from Harbor General Hospital into the City of Carson provides direct service for the Harbor City residents to such key locations as Carson Mall and Cal State-Dominguez Hills. Finally, the new route extension of SCRTD Route 607 provides service for Harbor City residents to such areas as Del Amo Fashion Square, the beach cities, and Los Angeles International

Airport. Overall, ridership from the Harbor City area can expect to increase by approximately 55,000 rides annually.

Wilmington

SCRTD Routes 873, 33, 810, and 849, as well as the future SCRTD Route 5 extension and a Long Beach route provide Wilmington with an effective transit service network. Consequently, aside from the extension of SCRTD Route 5 to incorporate the current Torrance Route 3 service to Long Beach, there are no recommended service improvements for the Wilmington area at this time.

Monitoring and Control of Service Improvements

In order to guarantee that the service improvements recommended by this study are implemented and operated in the most effective manner possible and that the service is maintained at the level deemed appropriate for demand, it is recommended that a special advisory committee be established. This committee should be comprised of elected officials from the South Bay area, who, working through their representatives on the SCRTD Board and for the new SBATS service, oversee the effectiveness of the expanded SCRTD role in South Bay as well as the newly designed SBATS system.

A special task of this committee would be to monitor the net effect of these service changes after the initial 12 or 18 month implementation phase. After such a period, modifications to the service should be made if needed and as appropriate.

II. PROJECT DESCRIPTION AND METHODOLOGY

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INTRODUCTION AND PURPOSE

In the fall of 1978, as a follow up to previously completed Performance Audits, the Los Angeles County Transportation Commission contracted with ATE Management and Service Company, Inc. to perform a Study of Potential Transit Service Improvements for the South Bay area.

The purpose of this study is "to produce technically sound and implementable recommendations for improved transit service delivery in the South Bay area."

The study area was defined as being that portion of Los Angeles County located South of Imperial Highway and West of the Harbor Freeway, but including all of the City of Carson as well as the Wilmington and San Pedro areas of the City of Los Angeles. Figure 5 depicts the study area as defined for this project.

This chapter, which summarizes the basis methodology for the project, is followed by a general description of the current status of transit in South Bay (Chapter III) and then by a presentation of the actual service analysis and improvement recommendations (Chapter IV). Chapter V describes the institutional alternatives, the analysis and appropriate recommendations. Supporting data and information is contained in an attached series of Appendices.

GOALS AND OBJECTIVES

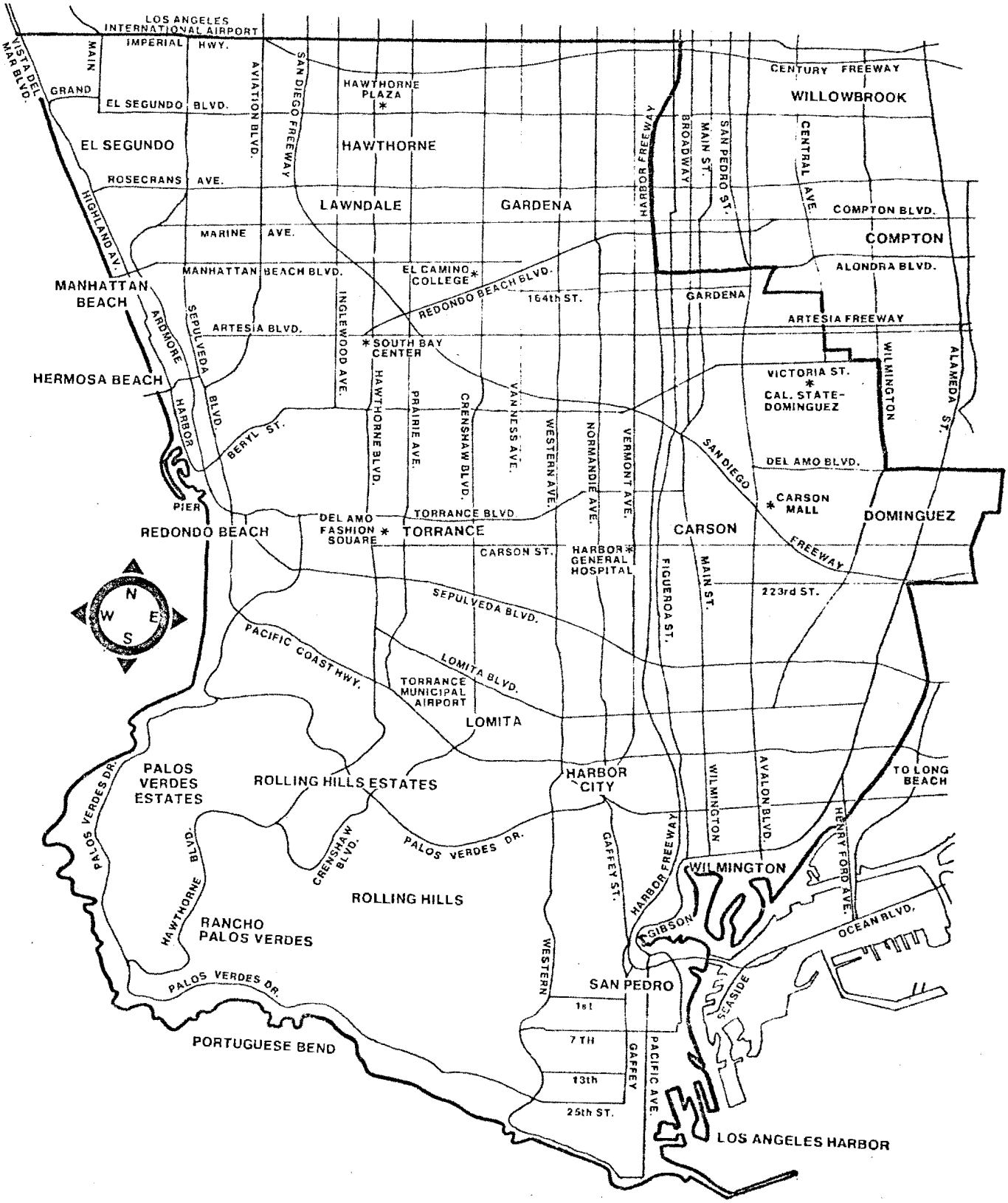
The principle objectives of this project include the development of products that could be instrumental in improving the quality and efficiency of mass transit service provided for the residents of South Bay.

These products are to include:

- The evaluation of several organizational and institutional alternatives for the provision of transit service and, ultimately, the selection and recommendation of the best alternative.
- The development of a "reasonably detailed" on-street transit system design complete with route descriptions, recommmended headways, fare structure, maintenance and support facilities, layover points, etc.
- The presentation of data and descriptive evaluations to support the service and institutional recommendations.
- The development of estimates of the impact that the proposed improvements might have on such key elements as operating costs, revenue, ridership, and required subsidy levels.
- A thorough evaluation of the maintenance requirements of the proposed South Bay service, an investigation of available sites for possible future garage locations and the development of a recommended maintenance and facility plan to meet those needs.

FIGURE 5

SOUTH BAY STUDY AREA



CRITERIA FOR DECISION MAKING

When analyzing current service and attempting to develop operational improvements, it was necessary to develop criteria which could be used in decision making. Accordingly, the following criteria were developed and used.

Service:

- No route design or method of operation should be altered unless the proposed change can result in operational economies, and/or improved accessibility to or quality of service provided for present or potential transit riders.

- When recommending system design changes, priority shall be placed on preserving the quality of the ride provided for the present transit rider over service to be made available to potential future riders.

- The improved transit service system recommended by this study "should not require a significantly greater public subsidy of South Bay transit service than that which would be needed to continue the status quo."

- When designing the best overall transit system possible, individual routes will be directed or extended to their most logical and "natural transit terminus." Existing political boundaries and historic areas of operational franchise shall be ignored.

- System design and service levels will be directed by logical transit factors only, i.e., past ridership level, desirability of various activity centers, previously established transit riding patterns, etc.

- The recommended maintenance and garage solution must be compatible with the recommended institutional and service design. Conversely, an institutional or service design alternative cannot be recommended if it cannot be accommodated by a viable garage and maintenance recommendation.

Institutional:

- The primary thrust of this project is directed toward developing the overall best transit system for the citizens of South Bay and the development of that system shall take priority over the selection of the best institutional alternative. The institutional alternative selected will be the one which can best accommodate the recommended transit system and not vice versa.

- When selecting a recommended institutional alternative, the question of limitations and restrictions of current State laws shall not be a consideration.

- "In the analysis of institutional alternatives, no presumption for or against the existing institutional structure should be assumed in advance."

General:

- Existing data sources will be primarily utilized with only selective development of new data.

- Modifications to the recommended transit system design and/or the recommended institutional alternative may be necessary because of possible limitations associated with future maintenance and garage site locations.

METHODOLOGY

Before actual work began, specific work elements were defined and placed in perspective relative to the overall goals and objectives of the project. A study team was assembled which drew upon the various technical specialties required for successful completion of the project. They began work without prejudices or preconceptions regarding a final solution. Accordingly, the final recommendations of the study team were developed only after many hours of observation, fact-finding and analysis.

Following are the various primary and secondary data sources used in the development of this project.

Primary Data

- Comprehensive Operational Analysis (COA)

A COA is an indepth study of ridership patterns, scheduling and the operating procedures of a transit system. It is performed primarily by professional route and schedule experts who are not natives of the area being analyzed. Therefore, bias is not brought into the COA process, and a "fresh look" may be taken of the service being offered.

Over a four week period, most of the service provided by the three local systems (Torrance, Gardena, and Hermosa Beach) were trail checked by route and schedule analysts. Trail checking involves repeated observations of loading and unloading patterns, evaluations of running time, traffic conditions, route inter-relationships, the operating environment, and rider walking patterns.

After the data is collected, the number of passenger boardings and the running time is summarized on a trip by trip basis. The total "ons" and "offs" for each intersection along the route are totaled, and plotted on a schematic map of the route. These schematics prove invaluable in the analysis of activity centers, transfer points, and areas of low and high passenger traffic volumes. When discussing route realignments, curtailments, or extensions, these schematics are a constant point of reference. Equally important are the subjective observations made by the experienced route and schedule analysts.

- Geographic and Demographic Analysis

Each team member made a thorough visual field investigation of the South Bay area. Geography is a major part of the COA process, and was especially appropriate for the South Bay area, because of its unique features.

Of particular importance was an inventory of current land use, the identification of major activity centers, and defining existing geographic barriers. All of this information was analyzed according to its potential impact on transit service in South Bay.

- Interviews and Personal Contacts

To produce new data and to become sensitized to local needs and problems, ATE team members conducted telephone calls and/or personal contacts with local planners, administrators, and business people. This effort gave the team members the opportunity to learn more about the area while those contacted could express their concerns and become familiar with this project and its objectives. Talking to area residents proved useful in establishing the atmosphere in which the team would be working. Constraints and issues which would have to be dealt with in our recommendations were clarified in these discussions. A list of those contacted is available upon request.

- Study of Major Employment Generators

As indicated, the South Bay area of Los Angeles County has several Central Business Districts (CBD's). The El Segundo area is the center for much of the employment in South Bay. Most of the aerospace industry is located there, as well as other large corporations. Accordingly, representatives were contracted from TRW, Rockwell, and Hughes to determine employee's transit modes and needs. Also contacted was a transportation representative from Commuter Computer, and a consultant for BEEP (Bus Express Employee Program).

Secondary Data

- Familiarization With Existing Routes

Schedules and maps were collected from each operator for Torrance and Gardena routes, and SCRTD routes entering the South Bay area (as defined in the project proposal). Team members used these to become familiar with the general route structure and service design provided by these operators.

- Review of SCRTD Data

To become familiar with SCRTD ridership characteristics, team members reviewed computerized "white sheets" supplied by the SCRTD planning department. "White sheets" supply ridership data much like the data collected by a trail check. Studying the printouts provided the objective data needed to recommend route realignments concerning SCRTD. (This data was verified on a selective basis as described in Appendix C.)

- Review of Existing Literature

To avoid duplicating previous data gathering efforts, and to gain a knowledge of the area's needs and programs, a survey of existing literature was undertaken. Team members visited Planning Departments, Municipal Governments, Transit Operators, and Dial-A-Ride centers, among others, to gather past reports and documents with possible implications for this project. Unfortunately, the information contained in these documents was of only limited value in addressing the goals and objectives of this project. Accordingly, the majority of the data utilized in the

development of recommendations for this report was generated by the ATE project team.

- Dial-A-Ride Services

Numerous dial-a-ride operations exist in South Bay. To become familiar with their services, the study team either contacted, or reviewed information on their systems. The operations were generally summarized and compared. A discussion of this topic can be found elsewhere in the report.

III. CURRENT STATUS OF TRANSIT IN SOUTH BAY

III. CURRENT STATUS OF TRANSIT IN SOUTH BAY

This chapter summarizes the transportation status quo in South Bay. Included are descriptions of current transit demand, types of trips, the present route structure, maintenance capabilities and other factors that demand notation.

Demand for Service

Studies conducted in recent years by DeLeuw, Cather and Company and by Centers for Study (CENTS) revealed a substantial demand for transit service in South Bay but relatively poor patronage of existing services. Current data supports these findings and points to such facts as:

- Currently, there is 35% more service in South Bay than the required minimum service standard for the area, as defined by S.C.A.G.
- L.A. County as a whole is generating over 40% more transit passengers per capita than is generated in South Bay.
- While South Bay is the home of about 13% of the population of Los Angeles County, it currently generates about 8.5% of the transit rides now made in the county.

In evaluating transit demand in the South Bay, there are several different and distinctive types of service needs which must be met by mass transit providers in the area.

The South Bay to L.A. CBD commuter trip appears to be the single most active common destination work trip. While about 5.5% of South Bay's work force work in the L.A. CBD, about 10% to 12% of those individuals are currently making their commute via mass transit. This is a significant modal split percentage and must be a prime consideration when designing transit service for this area.

The relative popularity of the existing South Bay to downtown L.A. express trips demonstrates the need and desire for mass transit service from South Bay residential communities to destinations outside of South Bay. This is also demonstrated by the fact that the single most productive route in the current Torrance System is Route 3 which operates to destinations beyond South Bay to downtown Long Beach.

Table 3 illustrates just how significant inter-regional travel is for South Bay residents. It can be seen that principal inter-regional routes now serving South Bay carry more than 17,000 riders daily into and out of the South Bay area. This represents more than 13% of the total ridership for those routes. Several of those routes currently claim from 25% to 40% of their total ridership as inter-regional passengers.

Despite such evidence pointing to the need for service to points outside of South Bay, there also appears to be a significant demand for a distinctly different type of service. Such a service would meet the demand for transportation within South Bay itself. This demand includes trips for shopping, school and recreation as well as employment.

TABLE 3

TRAVEL TO AND FROM SOUTH BAY VIA TRANSIT[1]

Route	Direction	South Bay Border Location	Onboard To & From Travel[2]	Total Route Passengers[2]	% Traveling To & From S.B.[1]
Gar. 1[3]	N/S	Vermont & El Segundo	697	1262	55.2
Tor. 1[3]	N/S	El Segundo & Harbor Fwy.	484	1498	32.3
Tor. 2[3]	N/S	El Segundo & Harbor Fwy.	261	922	28.3
Tor. 3[3]	E/W	PCH & Alameda	516	1340	38.5
Subtotal			1958	5022	39.0
RTD 5[4,5]	N/S	Hawthorne & Imperial	2379	20796	11.4
RTD 6[4]	N/S	Vermont & Imperial	1272	27564	4.6
RTD 10[4]	N/S	Prairie & Imperial	740	4958	14.9
RTD 49	N/S	Figueroa & Imperial	NA[6]	NA	NA
RTD 84	N/S	Western & Imperial	NA	NA	NA
RTD 85[4]	N/S	Crenshaw & Imperial	2194	27864	7.9
RTD 96[4]	N/S	Normandie & Imperial	1365	11042	12.4
RTD 114[4]	E/W	Compton & Alameda	297	800	37.0
RTD 353[4]	N/S	Vermont & Imperial	300	4774	6.3
RTD 607	N/S	Imperial & Sepulveda	NA	NA	NA
RTD 810[4]	N/S	Rosecrans & Harbor Fwy.	1649	3863	42.7
RTD 813[4]	N/S	Artesia & Harbor Fwy.	776	2032	38.2
RTD 814[4]	N/S	Artesia & Harbor Fwy.	432	516	83.7
RTD 836[4]	E/W	Imperial & Alameda	1185	6857	17.3
RTD 840[4]	E/W	Rosecrans & Alameda	1049	3052	34.4
RTD 841	E/W	Anaheim & Santa Fe	NA	NA	NA
RTD 842[4]	E/W	Compton & Alameda	252	555	45.4
RTD 846[4]	E/W	Artesia & Alameda	194	956	20.3
RTD 873[4]	N/S	Sepulveda & Imperial	477	1885	25.3
	E/W	Anaheim & Santa Fe	519	1885	27.5
Subtotal			15080	117514	12.8
Total			17038	122532	13.9

[1]Travel to and from South Bay describes regional transit activity and does not include trips originating and terminating strictly within the South Bay area.
[2]Two-way ridership totals.
[3]Based on ATE trail checks.
[4]Based on SCRTD on-board checks.
[5]Includes both Regular and Express Route 5.
[6]NA = Data not available.

The number of trips made (all modes) within South Bay itself clearly outnumbers the inter-regional trips for all trip purposes. The CENTS report, in its demographic evaluation of the South Bay area claimed that 65% of the South Bay population also works in South Bay. Del Amo Fashion Square claims that 95% of their sales are made to South Bay residents.

Route Structure - Local Systems

Local transit service is available from three separate municipal transit systems, Torrance, Gardena, and Hermosa Beach. Each one is characterized by a different level and type of operation.

The City of Torrance operates five routes seven days a week. Three of these routes are regional in nature, offering connection between South Bay and downtown Los Angeles and Long Beach. The Torrance system serves several South Bay cities: Torrance, Lomita, Carson, Redondo Beach, Gardena and the southern limits of Lawndale. Torrance also operates a "Shoppers Special" service between two major shopping areas, as well as another part-time local shuttle service.

The City of Gardena operates four regular routes daily and nine peak commuter trips on weekdays. The commuter trips primarily provide transportation for students to and from area schools. One of Gardena's lines, Route 1, offers frequent service to downtown Los Angeles and serves as a regional as well as local carrier. Cities served by Gardena's system include: Gardena, Compton, Lawndale, and the northern limits of Torrance.

The City of Hermosa Beach provides limited free bus service via one mini-vehicle operating along two loops. This service is restricted to the city and operates seven hours a day (9 to 12 and 1 to 5) everyday excluding Monday.

The service design of the present local transit network is illustrated in Figure 6. Local routes are generally indirect. Torrance has several loops in their route system which provide one-way service. Routes 1 and 2 to Los Angeles both have large loops which closely duplicate each other. Route 4 is comprised of two loops, one in Riviera Hills, and one near El Camino College. Route 5 has a large loop from Torrance and Gardena to Pacific Coast Highway. All Torrance headways are 60 minutes, except for 30 minute peak service recently added to the Long Beach route.

Gardena's route system has one large loop (Route 2), which extends from the length of Imperial to 190th Street. Two way service is offered on this route. Route 5 is very short, and is shaped like a horseshoe, making it quite indirect. All four of Gardena's routes operate with a 30 minute headway.

Regional System - SCRTD

The Southern California Rapid Transit District (SCRTD) provides a regional bus transportation network of 32 routes in the South Bay area. These lines serve shopping centers, work locations, schools and colleges, hospitals, residential areas and recreation sites both within and outside of South Bay. All of the municipalities in South Bay have access to SCRTD routes. These regional lines connect South Bay with other areas such as Long Beach, South Central Los Angeles, Santa Monica, Hollywood, and downtown Los Angeles. The current SCRTD system in South Bay is shown in Figure 7.

FIGURE 6

EXISTING MUNICIPAL ROUTES

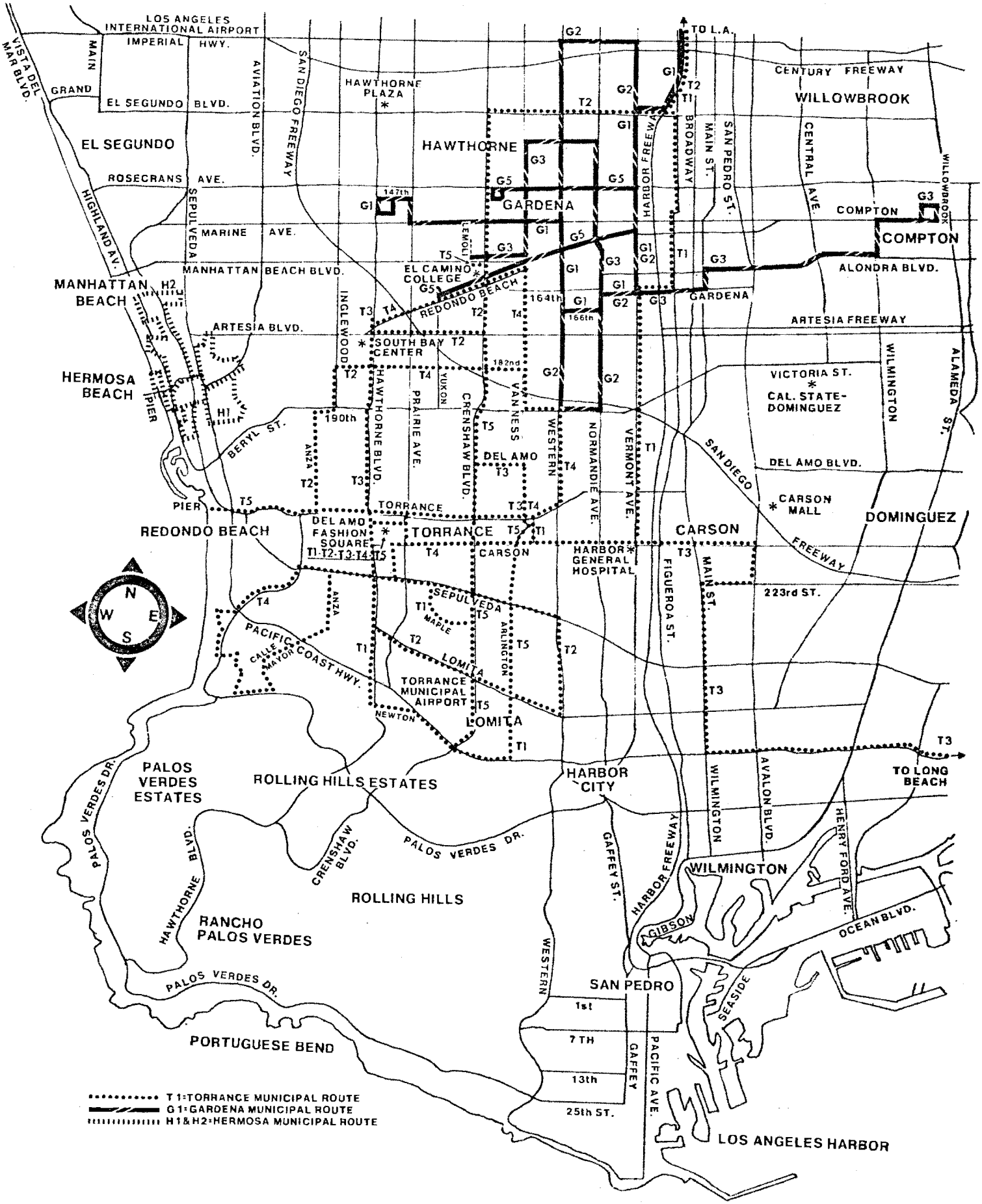
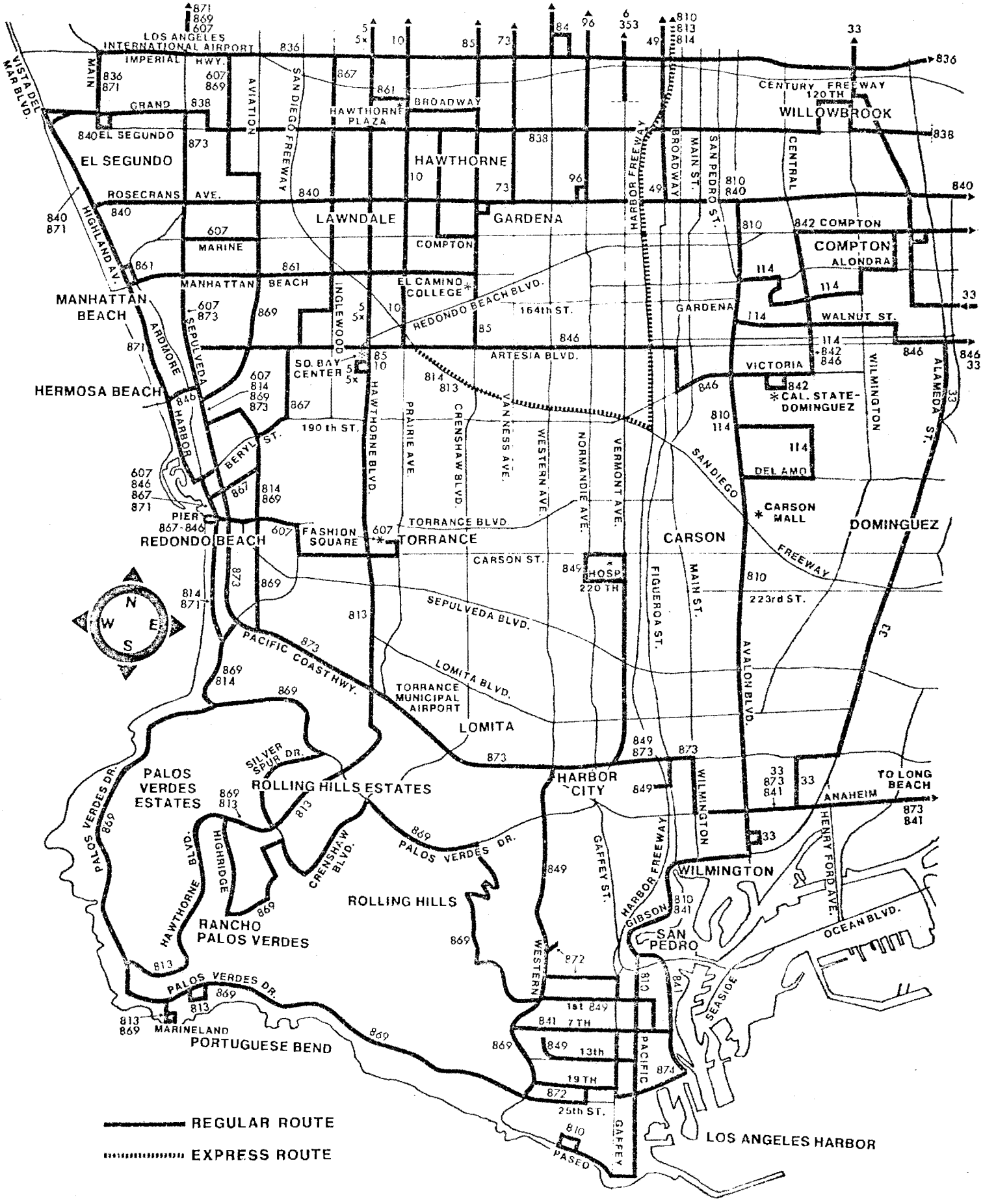


FIGURE 7

EXISTING SCRTD ROUTES



The Peninsula cities are served by three SCRTD routes, 813, 814, and 869. Routes 813 and 869 travel the major roads across the Peninsula providing 30 minute service to most points along the route. Route 814 terminates at Palos Verdes Drive and Via Chico, an entrance point to the Peninsula. Fifteen minute service is available on this route for northbound morning travel and for southbound evening travel. No service is operated on weekends or holidays via Route 814.

SCRTD also serves most of the Los Angeles County area via local and express lines. San Pedro is well served locally and regionally by SCRTD. Direct Park/Ride service is offered from San Pedro to Los Angeles. A regional SCRTD line exists between San Pedro and Long Beach via Anaheim Avenue.

Several major traffic generators in South Bay have direct SCRTD service. El Camino College is served by two SCRTD lines, Routes 861 and 85. California State University at Dominguez Hills can be reached by either Route 114 from Lynwood or 842 from Compton. Route 849 offers direct service to Harbor Junior College, Kaiser Memorial Hospital and Harbor General Hospital.

A major employment district, the El Segundo industrial area can be reached by Routes 607, 836, 838, 840, 869 and 873. Routes 607 and 813 provide service to Del Amo Fashion Square. Redondo Beach Pier is served by Routes 846 and 867. Routes 5, 10, 85 and 813 serve South Bay Center.

Also, SCRTD has provided for transfer connections to Los Angeles International Airport, the Beach cities, Orange County, Los Angeles Central Business District as well as the three municipal bus services in the South Bay region (Torrance, Gardena and Hermosa). Transfers from the SCRTD are valid on all municipal systems.

Transfer locations between Torrance routes and SCRTD's lines are available at Redondo Pier, Fashion Square Mall, Artesia Boulevard and Hawthorne Boulevard, Harbor General Hospital, and El Camino College.

Transfer points between SCRTD and Gardena are located at Normandie and Rosecrans, El Camino College, Western and Imperial, 120th and Vermont, Compton and Willowbrook, Hawthorne and 147th, and Artesia and Normandie. Other inter-system connections exist wherever routes intersect.

Dial-A-Ride Services in South Bay

A sizeable percentage of the residents in South Bay require public transportation but are unable to utilize the services of conventional mass transportation. These residents are mobility-restricted either because: (1) they do not reside along or near fixed transit route service, or (2) they have a physical handicap which restricts their mobility severely enough to prohibit them from utilizing regular transit coaches.

Demand-responsive or dial-a-ride transit systems are a common example of specialized transit service usually oriented towards elderly and/or handicapped individuals. However, a person can be mobility-restricted and not necessarily be a senior citizen or physically handicapped. That person may lack an alternative means of transportation.

.TERNAL CORRESPONDENCE

ATE MANAGEMENT AND SERVICE CO., INC

17 Vine Street
Suite 800
Cincinnati, Ohio 45202
513/381-7424

TO: Joe Misner, L.A.C.T.C. DATE: August 15, 1979

FROM: Tom Hock, Gary Taylor

SUBJECT: Impact of 13-C on Proposed South Bay Transit Reorganization

In assessing the potential labor cost of any project involving the use of federal funds, you have to be aware of probable costs due to Section 13-C of the Urban Mass Transportation Act of 1974, as amended. The main purpose of 13-C is "to provide fair and equitable arrangements for the protection of all employees...who may be affected in their employment as a result of the project." As recipients of federal funds systems agree that the project "will not in any way adversely affect employees covered by a 13-C agreement." The difficulty comes about in determining what is meant by "adversely affect" and determining just what the cost will be.

For purposes of this study the 13-C agreements for the City of Hermosa Beach, Torrance, Gardena and the Southern California Rapid Transit District of Los Angeles (RTD) were reviewed. It was also assumed that the merging of the systems for Hermosa Beach, Torrance and Gardena may result in the lay-off of approximately three operators. RTD service was expected to increase thereby resulting in a need for

additional operators. The new facility was assumed to be built in Torrance and to be only about one mile from the current building. It was further assumed that there would be no reduction in the number of maintenance employees needed and any operators laid-off would be needed by RTD.

The three systems to be consolidated in one facility in Torrance are represented by three Unions - the Teamsters in Hermosa Beach, Torrance Municipal Employees (AFSCME) in Torrance and the Office of Professional Employees in Gardena. In Gardena there are approximately fifty-eight employees covered by the labor agreement, in Torrance approximately fifty-one and in Hermosa Beach approximately twenty-five. In Hermosa Beach, however, only six employees are in any way involved in the operation of the transit service. Although the benefit levels of all three are fairly comparable, Torrance seems to have the more costly wage and benefit package.

The potential problems under 13-C fall into three areas: (1) maintenance of wages and benefits, (2) merging of seniority and (3) moving expenses. In all three areas, because of the manner in which the merger of systems will take place, there should not be a major problem as to the cost of the project.

The most costly of the three areas should be the maintenance of wages and benefits. Although the wages and

benefits would be negotiated, you should expect the wages and benefits to be the highest of any of the three systems. In this case the current Torrance agreements would most probably be in the new agreement. The overall affect of ending up at the Torrance level would mean that, in terms of the overall package, no one should be adversely affected. The new system should have some flexibility and bargaining latitude in negotiating the new labor agreement. This should apply especially to reducing the new beginning wage rates and extending the time to get to the top operator rate. By taking either of these actions, the system could offset part of the increased labor cost. Any employee of the three systems going to the RTD would be gaining overall so there should be no adverse affect on them.

Merging the seniority lists should be simply a matter of dovetailing the lists. A problem may arise with a larger union wanting to negotiate a more favorable position for the employees it represents. In any event, there should be no additional cost involved.

The possibility of moving expenses under 13-C presents a more complicated problem. Under the National 13-C Section 12 (e) (b) change of residence is defined to mean transfer to work location which "is located more than thirty (30) normal highway route miles from his residence than was his former work location." Under a very literal reading one could say, as the Union has with the RTD, that any move of the work location which is farther away from an employee who now drives thirty miles would result in a moving expense

if the employee moves. Although this does not seem logical or to have been the intent of the section, there is no answer at the present time. In any case, liability under this area seems both remote and very small if anything were to be collected.

In conclusion, the important thing to remember is that this is a very vague area. The major cost impact of 13-C should be in wage and benefit levels. The new labor agreement would be reached through much negotiation and even possibly arbitration. If you view Torrance as the most likely maximum cost you should have some idea of the total impact that such a merger might have on overall operating costs.

	Wage Rate	Holiday	Vacation Schedule	Health Ins. Contributions	Life Ins.	Pension	Cost of Living Clause	Sick Leave	Dental
Hermosa Beach	4-79		1-5 yrs. 1 day-mo. 6-10 yrs. 1-1/4-mo. 11-15 yrs. 1-1/2-mo. 16-20 yrs. 1-3/4-mo. 21 or more 2-mo.		$2,000			8 hr/ mo.	city pays $15.15
Torrance	$6.776[1]	12	1 yr. - 8 hrs/mo. 5 yrs. - 10 hrs/mo. 10 yrs - 13.35 hrs/ mo. 21 yrs. - 14.67 hrs/ mo. 25 yrs. - 15.33 hrs/ mo.	$121.20 includes dental contribu-tions			Yes	.0345 hrs per hr.	
Gardena	$6.50	12	1 yr - 12 days 5 yrs - 15 days 10 yrs - 18 days	$110			No		

RTD contract
expired 6-30-79

[1] Also have longevity pay

In order to meet these special needs of many South Bay residents, a number of municipalities have taken the responsibility of supporting and/or operating special transit services designed especially for elderly and/or handicapped individuals. Eight South Bay cities (Carson, El Segundo, Gardena, Hawthorne, Lomita, Manhattan Beach, Redondo Beach and Torrance) offer some form of a dial-a-ride transportation service. Each program varies slightly in its eligibility, vehicles, operation, service area, cost and funding characteristics. Table 4 presents a general description of each of the eight dial-a-ride systems.

There are two basic types of dial-a-ride systems in South Bay: (1) taxi-cab service in which the city subsidizes all but 25¢ of the cost of the ride for the user, and (2) city-operated van or minibus service with or without wheelchair capabilities. Four cities subsidize taxi companies and four operate a van or minibus service.

El Segundo and Gardena provide free dial-a-ride service to those eligible while the other cities, except Torrance, charge a fare of 25¢ a ride. Torrance charges 50¢ a ride but allows an escort to ride free if the rider needs assistance. Those cities providing dial-a-ride service via taxi companies require users to prepurchase tickets.

Service hours also vary among the dial-a-ride programs. The van services only operate during weekdays; whereas, the taxi companies operate 24 hours daily, seven days a week.

Most of the services are available to residents who are at least 60 years old and/or handicapped. Torrance offers the most specialized service that is restricted to handicapped persons in the city. Torrance's dial-a-ride system transports an average of 40 to 50 passengers a month.

El Segundo's 12-passenger van can be utilized by any resident of the city but the van is unequipped to lift and carry wheelchairs. El Segundo's service carries an average of 800 passengers a month.

Over 3000 individuals are registered with one or another of the dial-a-ride programs. This figure does not include the people of El Segundo and Gardena which do not require formal registration, only residency, to qualify. The eight services are carrying a combined total of 4400 to 4650 passengers a month. Hawthorne reports having the largest patronage in South Bay of 950 to 1000 passengers a month via its taxi-operated service.

From discussions with several directors of the dial-a-ride programs, the major destinations sought by users are: (1) medical centers and hospitals, (2) stores and commercial establishments in the local area, and (3) shopping centers. Del Amo Fashion Square seems to be a popular destination when it is included in the service area.

Financial support for the various systems comes from a wide range of sources. El Segundo's program is financed with city revenue-sharing funds. The major portion of Gardena's dial-a-ride costs are covered by a grant through the Older American's Act while the city provides servicing, maintenance and gasoline for the vehicles. Manhattan Beach's operating expenses are supported from local and CETA funds. A number of systems have purchased their vehicle with a capital grant from UMTA.

TABLE 4

DIAL-A-RIDE SERVICES IN SOUTH BAY

	CARSON	EL SEGUNDO	GARDENA	HAWTHORNE
Eligibility:	62+ residents	Any resident	60+ residents[2]	60+ residents
Operator:	Taxi company[1]	City[4]	Senior Citizens Bureau[6]	Taxi company[1]
Vehicle:	Cabs	Van (12 pass)[2]	Van (8 pass), car[2]	Cabs
Service hrs.:	24 hrs., 7 days	9-3 M-F	9-4 M-F	24 hrs., 7 days
Cost to pass.:	25¢	Free	Free	25¢
Cost/ride:	$2.50	$1.75[5]	NA[7]	$1.73
Passengers/month:	300-400	800	200-250	950-1,000
No. of vehicles:	---	1	2	---
Service area:	City and satellite	City	City and 1 mile	City and 1/2 mile
No. Registered:	375 people	Any resident	Any senior	540
Service began:	Oct., 1978	Dec., 1975	1975, Jan. 1977[3]	Nov., 1976
Contact/director:	Mr. E. Hajeian	Mr. R. Wynn	Ms. Resnick	Mr. T. Quintana Mr. H. Wohlner

1. City contract
2. No wheelchair capabilities
3. 1975-1977 utilized private cars; acquired van in Jan., 1977.
4. Financed from city revenue sharing funds.
5. Passenger averages 1.5 mile trip
6. Majority of the costs are supported by federal funds under Titles 3 and 7 of the Older American Act. The city provides servicing, maintenance and gasoline for the vehicles.
7. Not available

DIAL-A-RIDE SERVICES IN SOUTH BAY
(CONTINUED)

	LOMITA	MANHATTAN BEACH	REDONDO BEACH	TORRANCE
Eligibility:	60+ and/or handicapped	60+ and/or handicapped	62+ and/or handicapped	Handicapped
Operator:	Taxi companies (2)[1]	City[8]	Taxi company[1]	Dave Systems[1]
Vehicle:	Cabs	Minibus[3] (15 pass.)	Cabs	Minibus[6]
Service hrs.:	24 hrs., 7 days	9-12, 1-5 M-F	24 hrs., 7 days	9-5 M-F
Cost to pass.:	25¢	25¢	25¢	50¢
Cost/ride:	$2.48	$1.00-2.00[4]	$2.70[5]	$6.00-6.25[9]
Passengers/month:	600	850-900	650	650-800
No. of vehicles:	---	1[3]	---	2
Service area:	City and surrounding area[2]	City	City	City and 1 mile
No. registered:	412 people	465 people	755	876
Service began:	Feb., 1978	Nov., 1976	mid-Jan., 1978	Jan., 1978
Contact/director:	Mr. Irwin	Mr. L. Riehman	Ms. A. Palatino	Ms. R. Edmonds

1. City contract
2. 1.5 miles east and west of Lomita and 3.9 miles north
3. No wheelchair lift but UMTA-funded vehicle with 2 wheelchair capacity is forthcoming
4. Cost per passenger mile; $1.25-$2.50 cost per mile.
5. 10-15% are shared rides
6. Capacity for 3 wheelchairs plus 6 seated passengers
7. An escort can ride free
8. Driver's and dispatcher's salaries are financed through CETA funds
9. Per passenger figure so includes round-trip

Lomita which has an elderly population of 18 percent funds its program with city revenue acquired through the sales tax. Hawthorne finances its contract fee (paid $26,000 last year to the taxi company) out of the city general funds. Administration and accounting expenses are absorbed by the city's overhead costs.

The City of Gardena has proposed in its recent short-range transit plan the implementation of a city-operated dial-a-ride service. The existing service as operated by a social agency is limited in operation and effective utilization of resources. Proposed plans include the use of accessible para-transit vehicles to meet the needs of the handicapped residents.

Fare Structure

Table 5 displays the current local fare policies of the various transit operators now serving South Bay.

Present Maintenance Conditions

There are presently four transit operating and maintenance facilities in the South Bay service area. A general description of each of these facilities follows:

- SCRTD Division #12 is located in Western Long Beach in a predominantly residential area. The 143 assigned buses are maintained on six pits and two floor spaces. No hoists are available. Servicing is performed from two fueling positions that feed into a single cyclone cleaner and washing lane. Brake relines cannot be performed at this location because space, hoist, and drum lathes are not available. Because of inadequate maintenance space, some repair work is performed outside.

- SCRTD Division #18 is located on 190th Street just east of the Harbor Freeway. This is a temporarily leased facility and the existing metal building is used for maintenance. Six pits and eight floor positions are adequate for the 115 buses assigned. However, the building only has doors on one end, so through-flow is not achievable. Servicing is done from two fueling lanes and then funneled into single cyclone cleaners and power washer.

- Gardena Bus Line is located on Van Ness Avenue in the City of Gardena. The 33 buses operated from this location are maintained on one pit and one floor space. Other work areas in the garage are used to repair police, fire, and other city vehicles. Major work is contracted with local sources. A shop mode bus washer is single sided so full size buses must be washed from both ends. A separate consulting study has addressed the alternative choices and costs for a new facility.

- Torrance Transit System Facility is located within the City of Torrance yard where all vehicles are maintained. No special provisions are made for bus servicing so two spaces including one pit and one floor space are utilized for bus repairs. A single position for fueling and washing buses is provided. Land near the City Hall Center Complex has been acquired for a new bus operating center. An UMTA grant for construction of this facility is pending.

TABLE 5

LOS ANGELES COUNTY TRANSPORTATION COMMISSION
CURRENT SOUTH BAY FARE STRUCTURE

	SCRTD	GARDENA	TORRANCE
BASE	$ .45	$ .35	$ .25
EXPRESS	---	---	---
ZONES	.20	---	.10/.25
YOUTH	$14/mo.	.10	.15
SENIOR	.15	.10	Free
HANDICAPPED	.15	.10	Free
TRANSFERS			
INTRA-SYSTEM	.10	Free	Free
INTER-SYSTEM	.10	.10	.10
MONTHLY PASS	$18 +	---	---
BLIND	Free	Free	Free

IV. SERVICE ANALYSIS AND RECOMMENDATIONS

IV. SERVICE ANALYSIS AND RECOMMENDATIONS

An Assessment of the Existing System

The study team identified several inadequacies in the existing transit system. Inadequacies and deficiencies noted by the study team included:

A. Uncoordinated Service

Scheduling of transfer opportunities between Torrance and Gardena is generally uncoordinated. It is common for a passenger to have to wait forty minutes to make a transfer or an hour if their bus is late. This is illustrated in the following table. Table 6 shows the amount of time a person would have to wait to transfer from Gardena Route 1 - Los Angeles, to Torrance Route 1 Los Angeles. Under this example, the rider is traveling either to or from Harbor General Hospital and making the transfer at Gardena and Vermont.

This illustrates only two situations. To go from the City of Compton to Harbor General, a transfer at Gardena and Vermont could be made immediately (if the Gardena bus was exactly on time). More likely, however, is a 30 minute wait. If the immediate transfer could not be made, the person would have to wait an hour for the next bus to the hospital.

B. Political Boundaries and Franchise Areas

Existing political boundaries inhibit efficiency and inconvenience the transit patron. With a few exceptions, the Torrance and Gardena areas are unpenetrated by the regular SCRTD system. SCRTD must either divert around political boundaries or terminate the route, in many cases short of a more natural terminus. For the transit rider, this creates additional and unnecessary transferring and more waiting.

Table 7 identifies some of the unnecessary terminus points in the SCRTD route network. The table includes the total boardings and alighting at these locations as an illustration of how many transit riders may be affected by the route's inappropriate end. Note that, with few exceptions, major generators are not located at these termini, however extensive transferring takes place thereby producing the high boarding totals.

Besides eliminating many through routing possibilities, passengers must wait to transfer to a local bus. Such indirect routing which causes greater trip time, general inconvenience, and higher cost of operation tends to discourage the use of public transit service.

C. Duplication

Unnecessary service duplication occurs because the regional and local carriers have overlapping service on the same arterials. Overlapping routes can be found on Hawthorne (from Artesia to Pacific Coast Highway), Rosecrans (from Creshaw to Normandie), and Crenshaw (from El Segundo to Artesia).

TABLE 6

Southbound on Gardena #1 to S.B. Torrance #1			Eastbound on Gardena #1 to S.B. Torrance #1		
Time Arrive at Gardena and Vermont	Time Leave Gardena and Vermont	Approx. Time Needed to Transfer	Time Arrive at Gardena and Vermont	Time Leave Gardena and Vermont	Approx. Time Needed to Transfer
6:39a	7:10a	30 min.	6:35a	7:10a	35 min.
7:14a	8:10a	55	6:50a	7:10a	20
7:52a	8:10a	20	7:05a	7:10a	5
8:09a	8:10a	1	7:22a	8:10a	50
8:24a	9:10a	45	7:38a	8:10a	30
8:39a	9:10a	30	8:04a	8:10a	5
8:56a	9:10a	15	8:39a	9:10a	30
9:12a	10:10a	55	9:14a	10:10a	55
9:37a	10:10a	30	9:49a	10:10a	20
10:12a	11:10a	55	10:24a	11:10a	45
10:47a	11:10a	20	10:59a	11:10a	10
11:22a	12:10p	50	11:34a	12:10p	35
11:59a	12:10p	10	12:09p	12:10p	1

TABLE 7

ACTIVITY AT SCRTD TERMINUS LOCATIONS

Route	Location	Total On	Total Off
5	Hawthorne and Artesia[1]	167	160
5	South Bay Center[1]	107	148
6	Vermont and 120th	408	373
10	Hawthorne and Artesia[1]	89	90
10	South Bay Center[1]	49	42
49	Figueroa and Rosecrans	NA	NA
73	Van Ness and Rosecrans	102	143
84	Imperial and Western	NA	NA
85	Crenshaw and Artesia	47	44
85	South Bay Center	120	130
96	Normandie and Rosecrans	177	205
114	Compton and Willowbrook[2]	146	110
	Del Amo and Avalon	15	8
353	Vermont and 120th	73	99
607	Fashion Square Terminal	NA	NA
842	Cal State Dominguez	24	31
849	Carson and Normandie[3]	0	46
849	Carson and Vermont	190	106

[1] Hawthorne and Artesia is the intersection bordering South Bay Center.
[2] This point is the terminus of every other trip on Route 114.
[3] This point is near the end of the line on the loop around Harbor General Hospital.

Source: SCRTD Ridership Data Profiles

D. Quality of Service - An Overview

The quality of the existing service suffers from flaws which will be explained in more detail in the route by route descriptions. A general overview will be given in this section.

The mere fact of having three systems causes confusion to the potential transit rider. Each system has a different fare structure, and their own senior citizen and student programs and policies. This often proves to be a discouraging experience for present and potential riders.

Road supervision of the Torrance and Gardena systems is almost nonexistent. Timechecks to monitor on-time performance or compliance of rules are seldom taken. Team members noticed some drivers who, when significantly behind schedule, made no effort to make up the time while others seemed unconcerned about running several minutes early. Such conditions usually exist because drivers are aware of the lack of street supervision, and consequently, have little chance of being reprimanded.

Marketing for the Torrance and Gardena systems also showed deficiencies. Although each system requires uniforms, drivers did not always wear the same style, or in some cases they wore street clothes or even blue jeans. This detracts from each system's professionalism, and makes them less identifiable to the public.

Public timetables, also very important for good marketing, lack consistency. Torrance's Route 3 Long Beach timetable was not changed to reflect the improved headway when 30 minute service was implemented. As a result, most of the public is led to believe the route still runs every hour. Thirty minute service was added about two months prior to this writing, however, updated timetables still are not available as of this date. Confusion has also resulted from the manner in which the new Torrance Route 3 service was implemented. The added trips operate via a different route than the original trips shown on the schedule. The "bubble" from Crenshaw to Del Amo to Van Ness was eliminated, and the route was terminated at Fashion Square instead of Hawthorne and 172nd Street. If a patron boarded the new trips and wanted to go to either altered segment, they would have a long walk. In these cases, such inconsistencies make transit riding confusing and unpleasant.

Torrance Route 1: Torrance - Gardena - Los Angeles

Route 1 currently offers hourly service between the cities of Lomita, Torrance, Gardena, and Los Angeles. This route is comprised of two segments: (a) one-way service from Del Amo Fashion Square through the city of Lomita and returning to Fashion Square via Pacific Coast Highway and Hawthorne Boulevard; and (b) two-way service from Fashion Square to downtown Los Angeles via downtown Torrance, Harbor General Hospital, downtown Gardena, and the Harbor Freeway.

Torrance operates 60 minute headways all day on this route. In addition, there are two morning work trips from El Segundo Boulevard and Figueroa Street to Harbor General Hospital and a return afternoon work trip. The route produces the highest ridership of the system's 5 routes.

An analysis of the trail checks reveals that ridership on Route 1 is mainly regional in nature with most of the activity between the Torrance Terminal on Cabrillo and the Harbor Freeway. Only fourteen percent of the trips continue beyond or begin before Torrance Terminal. A significant number of trips originate or terminate in downtown Los Angeles, especially during peak periods.

Transfer activity occurs at several locations. The intersections of El Segundo and Figueroa, Figueroa and Rosecrans, and Gardena and Vermont are points where riders transfer from Torrance No. 1 to SCRTD or Gardena lines. Transfer activity with the other Torrance lines is very high at Torrance Terminal and moderate at Fashion Square.

The major generator on this route is Harbor General Hospital. Machine and assembly plants and other similar employment centers located along Carson, Vermont and Figueroa also receive considerable transit activity. In addition to medical and work trips, several school trips are generated along the north segment.

The south loop provides direct access to residential areas and schools in south Torrance and Lomita. The loop connects these areas with strips of commercial development along Pacific Coast Highway and Hawthorne north to Fashion Square.

Under the current routing, the residential areas fail to produce much ridership. A fair amount of activity is related to areas in Lomita, which house a high proportion of elderly residents.

Minor regional travel occurs between Lomita and points beyond Fashion Square on Route 1. Most of the rides on the south segment are local and confined to the loop. School and shopping trips are the bulk of activity and most of the trips are directed to Fashion Square or to the schools along Arlington.

Based on in-depth observations and analyses of existing ridership, it is recommended that Route 1 be reduced in length and coverage area to create a more cost-effective route. The proposed Route 1 will operated with 60

minute headways from Torrance Terminal to downtown Los Angeles. The terminal is the route's logical terminus in South Bay because there is little regional activity beyond it.

This shorter route will be more economical on a cost per mile basis and will adequately handle the regional activity currently produced by Route 1. The change will also help eliminate unnecessary route duplication between Fashion Square and Torrance Terminal. The reduction of under-utilized operating time will improve cost-effectiveness.

It is recommended that the proposed Route 1 continue under local operation in accordance with the previously described decision-making criteria and should be operated by a newly created unified local operating body which, for the purposes of this report only, ATE will refer to as the South Bay Area Transit System, or SBATS (see Chapter V - Institutional Alternatives). No service changes, except for this shortening of the route, are proposed. The local operator should be able to operate the service at a lower cost than SCRTD without any loss in convenience or quality to the rider. Furthermore, there is no alternative SCRTD route within proximity which could be extended to possibly interlock with this route. Figure 8 illustrates the present and proposed Route 1.

Regarding the southern end of Route 1, it is recommended that this loop be discontinued because it is poorly designed, unattractive to users, and not cost-effective. There is insufficient demand for through routing from this loop to the north segment. One-way service around the loop deters ridership because of lengthy travel times.

However, there is a need to continue to provide transit service to this general area and, consequently, it is recommended that SCRTD Route 607 be extended from its current layover point at Fashion Square Terminal to Lomita via a loop offering two-way service.

The extension of Route 607 will travel east to Madrona, south to Carson, west to Del Amo Circle, south to Sepulveda, east to Western, south to Lomita, west to Hawthorne, north to Sepulveda, east to Del Amo Circle, north to Carson, east to Madrona, north to Fashion Way, and west to the terminal completing the loop. The new routing of Rt. 607 is shown in Figure 9.

This loop would also provide service for the southern part of Torrance Route 2. Upon evaluation of Routes 1, 2, and 607, 607 seems to offer better possibilities for a more productive through-route in the area. More discussion in this vein appears in the next route description.

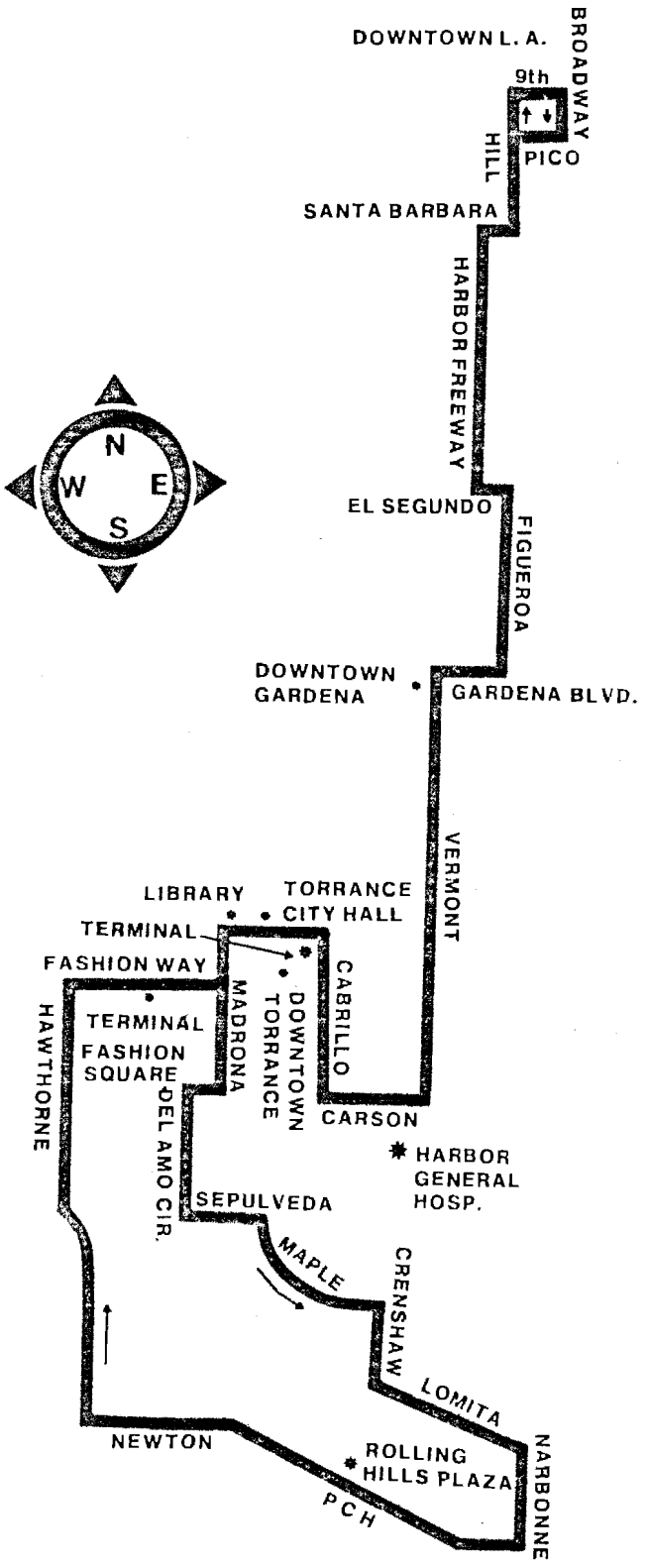
This route extension will be operated regionally by SCRTD with two-way service and 60 minute headways. Every other 607 bus arriving at Fashion Square Terminal will continue through the proposed loop and alternate clockwise and counterclockwise. New two-way hourly service will help attract riders.

This recommendation, together with several other rerouting proposals, to be presented for the area, should satisfy current travel needs and patterns for this area. The residents of Lomita will have more direct service to

FIGURE 8

TORRANCE ROUTE 1
LOS ANGELES

PRESENT



SBATS ROUTE 1
LOS ANGELES VIA VERMONT

PROPOSED

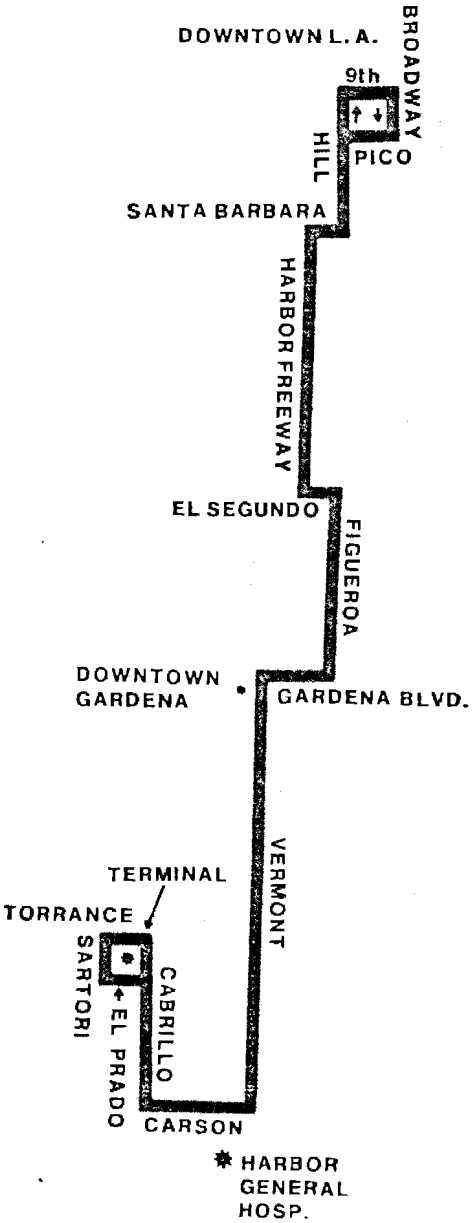
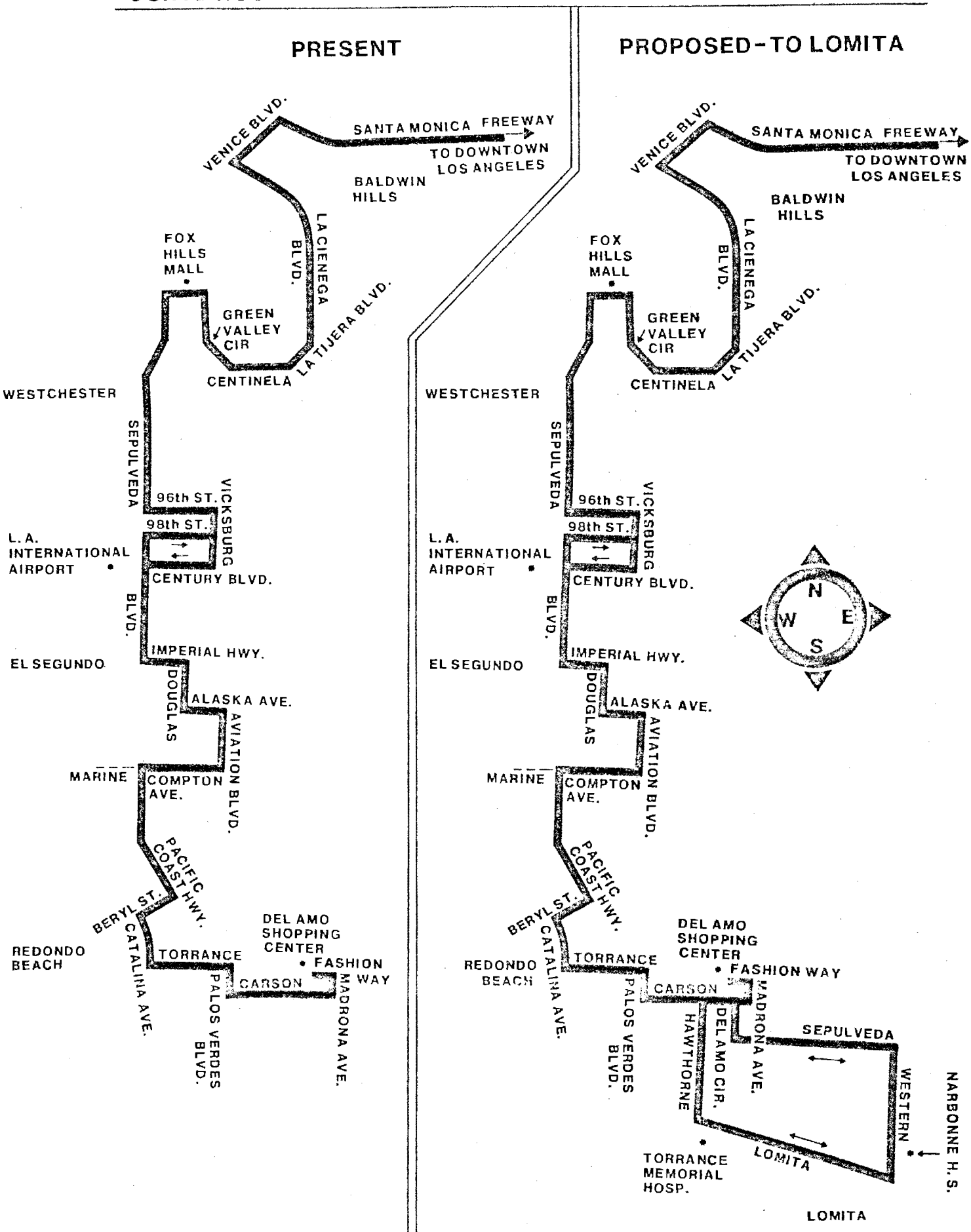


FIGURE 9

SCRTD ROUTE 607-LOS ANGELES-REDONDO BEACH-TORRANCE



Fashion Square. People in the Newton area will still have access to several alternative routes, SCRTD Route 873 along Pacific Coast Highway and Route 813 along Hawthorne.

A new line from Redondo Pier to Pacific Coast Highway via Torrance and Arlington will serve the students attending the schools along Arlington. Detailed description of this route is presented in the section on Torrance Route 5.

In addition, the extension of Route 607 into South Torrance and Lomita opens up new direct service to and from the Beach cities, El Segundo industrial district, Los Angeles Airport, and numerous residential and commercial areas.

Creating two-way service and transportation to new areas while providing better routing to existing service areas makes this proposal very advantageous. These service improvements will promote better transit productivity by encouraging additional ridership and minimizing operating expenses.

Torrance Route 2 - Los Angeles

Hourly service to downtown Los Angeles is also available to Torrance, Lomita and Gardena residents via Torrance Route 2. As Figure 10 illustrates, this route is comprised of two segments: (a) a south loop from Fashion Square to mixed commercial and residential areas along Sepulveda, Western and Lomita arterials and continuing north past commercial activities on Hawthorne; and (b) a segment from Fashion Square to downtown Los Angeles via South Bay Center, El Camino College, El Segundo and the Harbor Freeway.

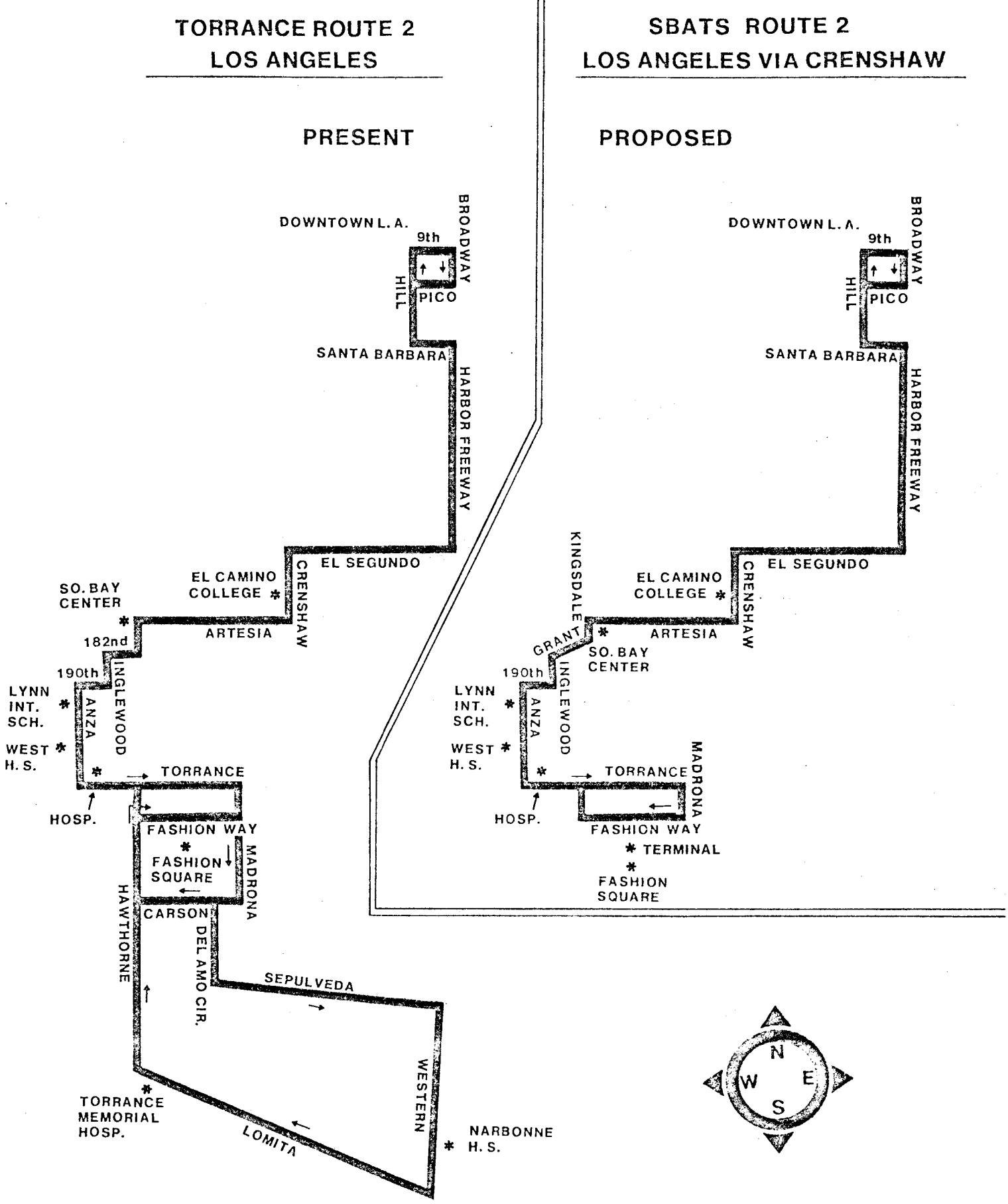
The route serves apartments, single-family homes and several schools along Anza and Inglewood. Development along the segments of Artesia, Crenshaw and El Segundo is primarily strip commercial intermixed with some multi-family land use. One-way hourly service is operated on the south loop connecting a high school and Torrance Memorial Hospital with other points along the route.

Ridership on the loop is low compared to the other segment. Most of the trips from the loop are directed towards Del Amo Fashion Square. A high school on Western generates considerable transit activity but only during certain periods of the day. Activity along Lomita is moderate. The medical center and hospital are attracting the most riders in this area.

Route 2 is one of Torrance's more productive routes because of the activity generated along the north segment. Major generators on this route, aside from Fashion Square, are downtown Los Angeles, El Camino College, and, to a lesser degree, South Bay Center. There is considerable regional travel on this route from South Bay to Los Angeles and vice versa.

Ridership is substantial and solid throughout the route from Torrance to the Freeway entrance and Los Angeles. Apartments and homes along Anza generate modest transit activity as do two schools in that area. Much of activity along Crenshaw focuses on the college. Activity is good and dispersed across El Segundo.

FIGURE 10


TORRANCE ROUTE 2
LOS ANGELES
PRESENT
DOWNTOWN L. A.
9th
BROADWAY
HILL
PICO
SANTA BARBARA
HARBOR FREEWAY
EL SEGUNDO
CRENSHAW
EL CAMINO COLLEGE
SO. BAY CENTER
ARTESIA
182nd
190th
INGLEWOOD
ANZA
LYNN INT. SCH.
WEST H. S.
TORRANCE
HOSP.
FASHION WAY
FASHION SQUARE
MADRONA
CARSON
HAWTHORNE
DEL AMO CIR.
SEPULVEDA
WESTERN
TORRANCE MEMORIAL HOSP.
LOMITA
NARBONNE H. S.
SBATS ROUTE 2
LOS ANGELES VIA CRENSHAW
PROPOSED
DOWNTOWN L. A.
9th
BROADWAY
HILL
PICO
SANTA BARBARA
HARBOR FREEWAY
EL SEGUNDO
CRENSHAW
EL CAMINO COLLEGE
KINGSDALE
GRANT
ARTESIA
SO. BAY CENTER
190th
INGLEWOOD
ANZA
LYNN INT. SCH.
WEST H. S.
TORRANCE
MADRONA
HOSP.
FASHION WAY
TERMINAL
FASHION SQUARE
N
W
E
S

Some transfer activity between this route and SCRTD lines occurs at Hawthorne and Artesia, Crenshaw and Rosecrans, and Crenshaw and El Segundo. Transfer activity is also evident at Fashion Square Terminal.

Between 182nd St. and Artesia on Hawthorne, activity is very light. This area is served by several routes running along Hawthorne creating much duplication in service.

Through travel to and from the south loop is relatively small. Only eleven percent of all trips on Route 2 go beyond Fashion Square. Through travel is made unattractive by the lengthy delay at the terminal where the bus lays over.

In order to increase performance by reducing operating costs, the ATE team recommends restructuring the route to terminate at Fashion Square Terminal. Discontinuing the through route service to Lomita will result in savings without significant inconvenience for present riders.

A minor change in routing around South Bay Center is also warranted. The new route will proceed north on Inglewood to Grant, east to Kingsdale (back entrance to South Bay Center), north to Artesia, east to Crenshaw then continuing via the current routing. Ridership along Hawthorne is minimal as the ridership schematic illustrates (See Appendix B). Better access to South Bay Center should attract additional riders, while the residential neighborhood north of 182nd should also be better served by local transit.

Based upon study criteria, it is suggested that this new route continue under local operation as SBATS Route 2 with 60 minute headways. Hourly service should be adequate for current demand but it should be adjusted as demand dictates.

An analysis of Route 2's south loop and transit travel patterns in the area supports the continuation of this loop with the addition of two-way service and SCRTD operation. It is recommended that SCRTD Route 607 take over this loop service from Fashion Square to Lomita.

Routing for the extension of SCRTD Route 607 is discussed in the previous section, Torrance Route 1. The map of Route 2 in Figure 10 helps illustrate the proposed restructuring.

Implementing the Route 607 extension with two-way service, as well as the new Redondo Pier - Lomita route, and the Crenshaw route extension (these latter two changes are discussed later in this chapter) will provide more attractive, useable service for the residents of the South Torrance and Lomita area and better operating performance for the transit operators.

Torrance Route 3 - Torrance - Carson - Long Beach

Route 3 of this local system operates from North Torrance to Carson, Wilmington and Long Beach. Buses are scheduled with 60 minute headways all day. During several hours in the morning and again in the afternoon service is available every 30 minutes along a shortened version of this line.

This route attracts very good patronage as the ridership schematic in Appendix B illustrates. The line serves commercial activities along Hawthorne, three shopping centers, several downtown districts, middle and lower income residential areas, employment centers and numerous schools.

In addition, the route intersects with several SCRTD routes as well as other local lines to provide numerous transfer opportunities. Major transfer points are Artesia and Hawthorne, Fashion Square Terminal, Torrance Terminal, Carson and Avalon, Main and Pacific Coast Highway (PCH) and Pacific and 4th. The last one serves as a transfer point between the Torrance and Long Beach systems. The present routing is depicted in Figure 11.

The largest generator of transit activity is the County hospital, Harbor General. Other major generators include South Bay Center, Del Amo Fashion Square, the Armco Plant, Carson and Banning High Schools and Wilmington Junior High.

Ridership is very good and dispersed along the route. Through-travel activity from Long Beach to Torrance and north on Hawthorne, and vice versa, is significant. Continuation of this service is therefore necessary and desirable.

Currently, a major problem with this route is an excessive amount of scheduled layover time. The bus has layovers at Long Beach, Fashion Square, and Hawthorne and 147th every trip. Too much layover time can create unnecessary costs to the operator and can inconvenience or discourage riders.

A minor route revision is recommended. The segment covering Crenshaw, Del Amo and Van Ness is relatively unproductive and should be eliminated. The few users alighting from this area will have alternative transit service via a line proposed along Crenshaw (refer to discussion on SCRTD 85). Activity on Van Ness is within walking distance of Torrance Blvd. so transit users will still have service available to them. Routing the Long Beach line east across Torrance from Madrona to Cabrillo will help reduce travel time and produce operating savings.

Another recommended service revision involves eliminating layover time at Fashion Square. In many instances, the bus delays here with people on-board who are waiting for through service. A reduction in layover time in Long Beach is also recommended.

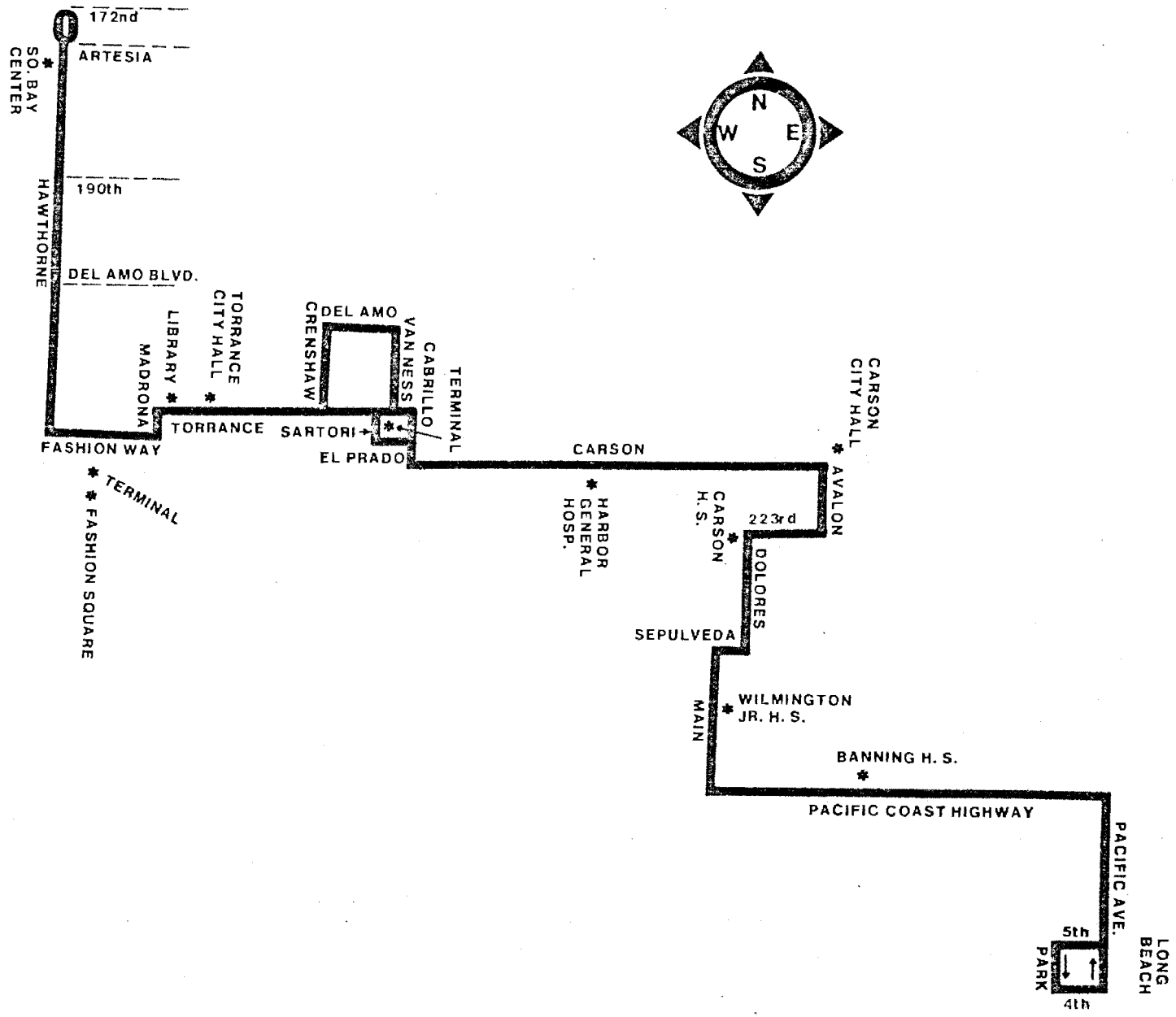
A major change is recommended in the method of operating this service. It is recommended that Torrance Rt. 3 be combined with SCRTD Route 5. The extension of 5 from South Bay Center to Long Beach is a natural connection because of both operational economies and travel desires.

The big advantage in combining Torrance Route 3 with SCRTD Route 5 is the scheduling economies which can be realized by minimizing layover time because of a more advantageous running time "fit". It is estimated that in excess of $83,000 annually can be saved in operating costs because of this recommended service change. Additionally, there will also be an increase in service area offered to existing and potential riders. Riders along the route will have more through-travel opportunities. Residents of Carson and Wilmington, in particular, will have better access to activities along northern Hawthorne Boulevard.

FIGURE 11

TORRANCE ROUTE 3-LONG BEACH

PRESENT



SCRTD ROUTE 5

(SEE SCRTD RT. 5- PROPOSED)

As presented in the discussion on SCRTD Route 5, it is proposed that every fourth vehicle will be routed south to Long Beach from South Bay Center. This will provide service every 40 minutes which is adequate to meet current demand.

Implementing these service revisions will result in substantial savings. Operation of this new line can be managed most effectively by incorporating it into the regular current SCRTD Route 5. Cut-backs accrued from the service revisions (i.e. reducing layover time) will more than offset the higher cost per hour requirement of SCRTD operation.

Torrance Route 4 - Riviera - El Camino

This line provides hourly minibus service throughout the day connecting Hollywood-Riviera (southwest Torrance) and El Camino College via Fashion Square. The route consists of two loops: a) the Hollywood Riviera loop running clockwise from Sepulveda and Anza every even hour and counter-clockwise every odd hour; and b) the El Camino loop running clockwise through Downtown Torrance and North Torrance on all trips. The routing of this service is shown in Figure 12.

The Hollywood Riviera loop serves middle-income neighborhoods in southwest Torrance connecting them with the shopping district in southern Redondo Beach, Southwood Shopping Center, South High School and Del Amo Fashion Square.

Activity along this loop is dispersed, yet consistent overall. Major generators are the Hollywood-Riviera commercial district and Fashion Square. The residential areas are producing a modest amount of transit activity. Riders tend to be primarily senior citizens, students and housewives. A number of riders are traveling through to El Camino College.

The El Camino loop serves the residential areas of central and northwestern Torrance, industrial activities along Western, commercial districts on Hawthorne and Redondo Beach Boulevards, and El Camino College.

As the schematic in Appendix B reveals, activity along this section of the route is generally light except at a few locations. The intersections of Van Ness and 182nd and Van Ness and Redondo Beach Boulevard generate considerable transit traffic. Other major generators are Torrance Terminal, El Camino College and South Bay Center.

Some transfer activity to the Gardena Route 2 occurs at 190th and Western. Significant transfer activity with other Torrance routes is evident at Torrance Terminal.

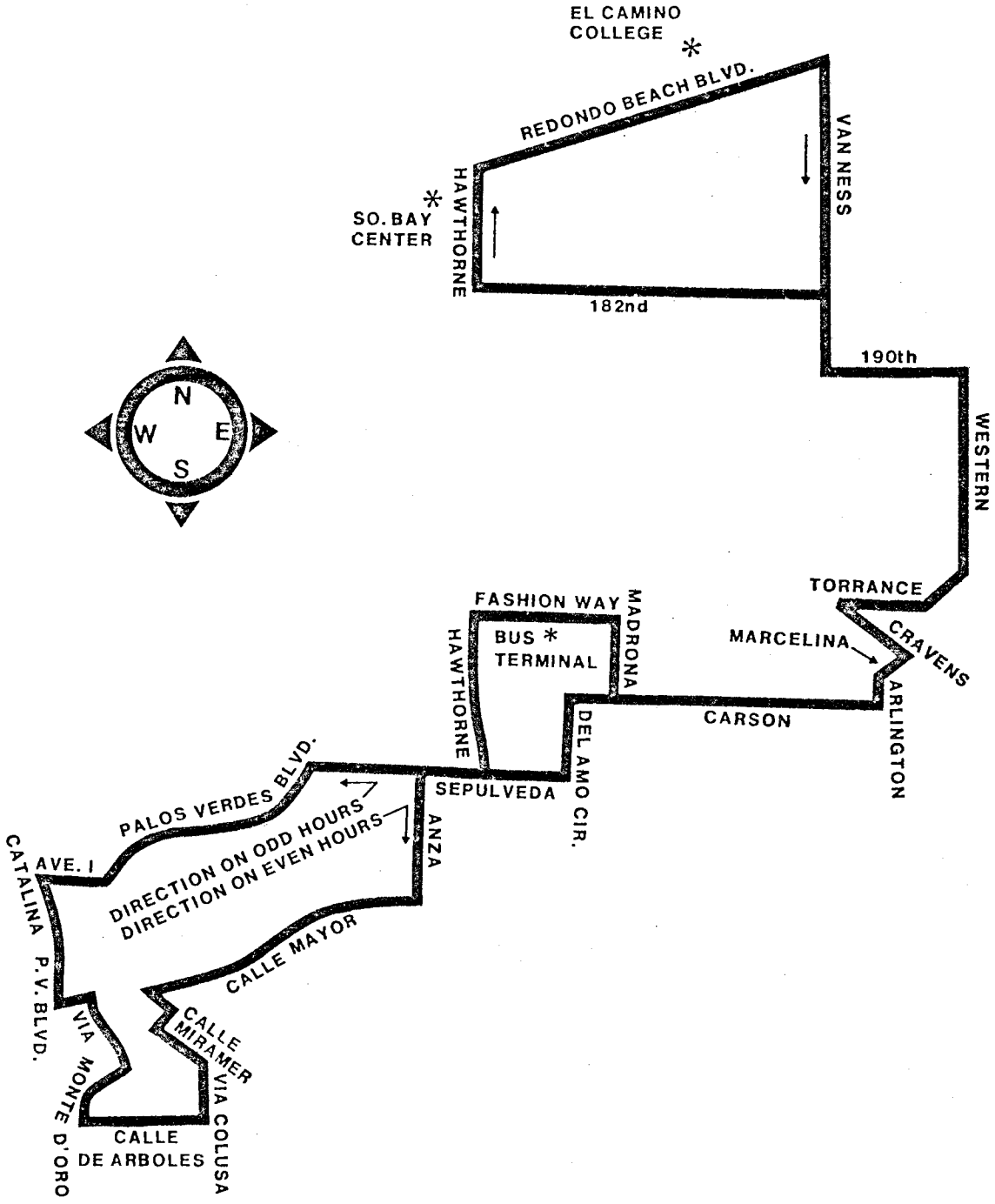
Ridership on the entire line is split fairly evenly between the two loops. Each loop tends to produce separate and confined activity. Minor through travel occurs, but this activity is mainly from the Hollywood-Riviera neighborhoods to El Camino College.

Ridership from areas along the El Camino loop could be higher if service was rerouted to better accommodate travel patterns.

FIGURE 12

TORRANCE ROUTE 4-RIVIERA-EL CAMINO

PRESENT



PROPOSED - (SEE SBATS RT. 4 & 6)

It is recommended that existing local service to the Hollywood-Riviera area be maintained because ridership is generally adequate. A large number of senior citizens depend on this service. There is no better alternative to serve the local travel needs in this area. The very narrow and hilly streets require the use of a small vehicle.

Through routing to the college should continue but directional changes and an extension to Gardena is recommended. It is recommended that a new Riviera-El Camino-Gardena route be established which should follow the Riviera loop as before but then proceed east on Sepulveda to Hawthorne, north to Carson, east to Madrona, north to Fashion Way, and west to Fashion Square Terminal. Then the route should continue from the terminal, west to Hawthorne, north to Torrance, west to Anza, north to 190th, east to Inglewood, north to Grant, east to Kingsdale (the back entrance to South Bay Center), north to Artesia, east to Redondo Beach Boulevard, northeast to Van Ness, north to 135th, east to Normandie, south to Gardena Boulevard, east to New Hampshire, north to 164th, east to Vermont, south to Gardena Boulevard and west reversing the route back to Fashion Square and the loop. Figure 13 illustrates the routing of this new local service.

This new route, which will be referred to as SBATS Route 4, would make South Bay Center more accessible, serve the college and Redondo Beach Boulevard more effectively, and create more opportunities to transfer to local and regional routes at key transfer points.

Regarding the El Camino loop, it is recommended that that service be totally redesigned to more effectively meet the needs of the area. The existing loop should be discontinued and a combination of routes through the area introduced.

A new El Camino-Redondo Pier route should be created to replace service now provided by the existing El Camino loop. Operated locally with hourly two-way service, the new route would leave the college at Manhattan Beach Boulevard and Lemoli, and travel east to Crenshaw, south to Gardena Blvd., east to Van Ness, south to 190th, east to Western, south to Torrance Blvd., west to Cabrillo, south to Torrance Terminal, west to Sartori, north to Torrance Blvd., west to Madrona, south to Fashion Way, west to terminal, pull in and out (no layover), west to Hawthorne, north to Torrance Blvd., and west to Redondo Pier. Either the Pier or the college could serve as layover points. This new local route is shown in Figure 14.

This route could substantially improve upon the one-way, inconvenient service now provided by the existing loop. More direct service to the Pier and Fashion Square would be available. Those areas no longer served would have access to other routes designed to better meet their travel needs.

Layover time at Fashion Square Terminal would be eliminated making through travel more convenient and desirable.

The new route would be operated locally with 60 minute headways.

The new local route connecting the college and Redondo Pier could accommodate the local travel demands in northeastern Torrance. This route would provide access to other routes, shopping centers, Redondo Beach, and beachfront recreation and commercial areas.

FIGURE 13

SBATS ROUTE 4
RIVIERA - EL CAMINO - GARDENA

PROPOSED

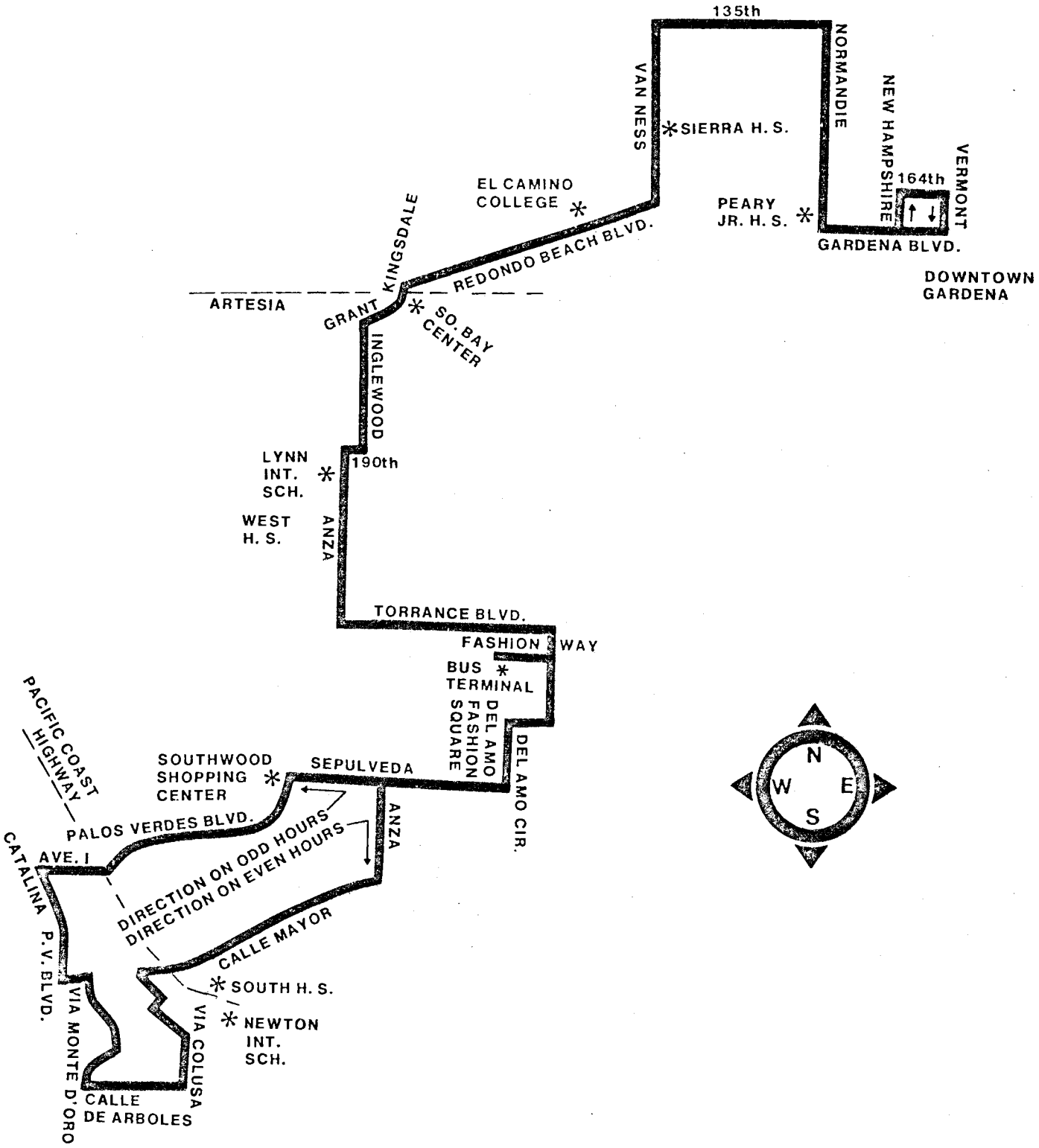
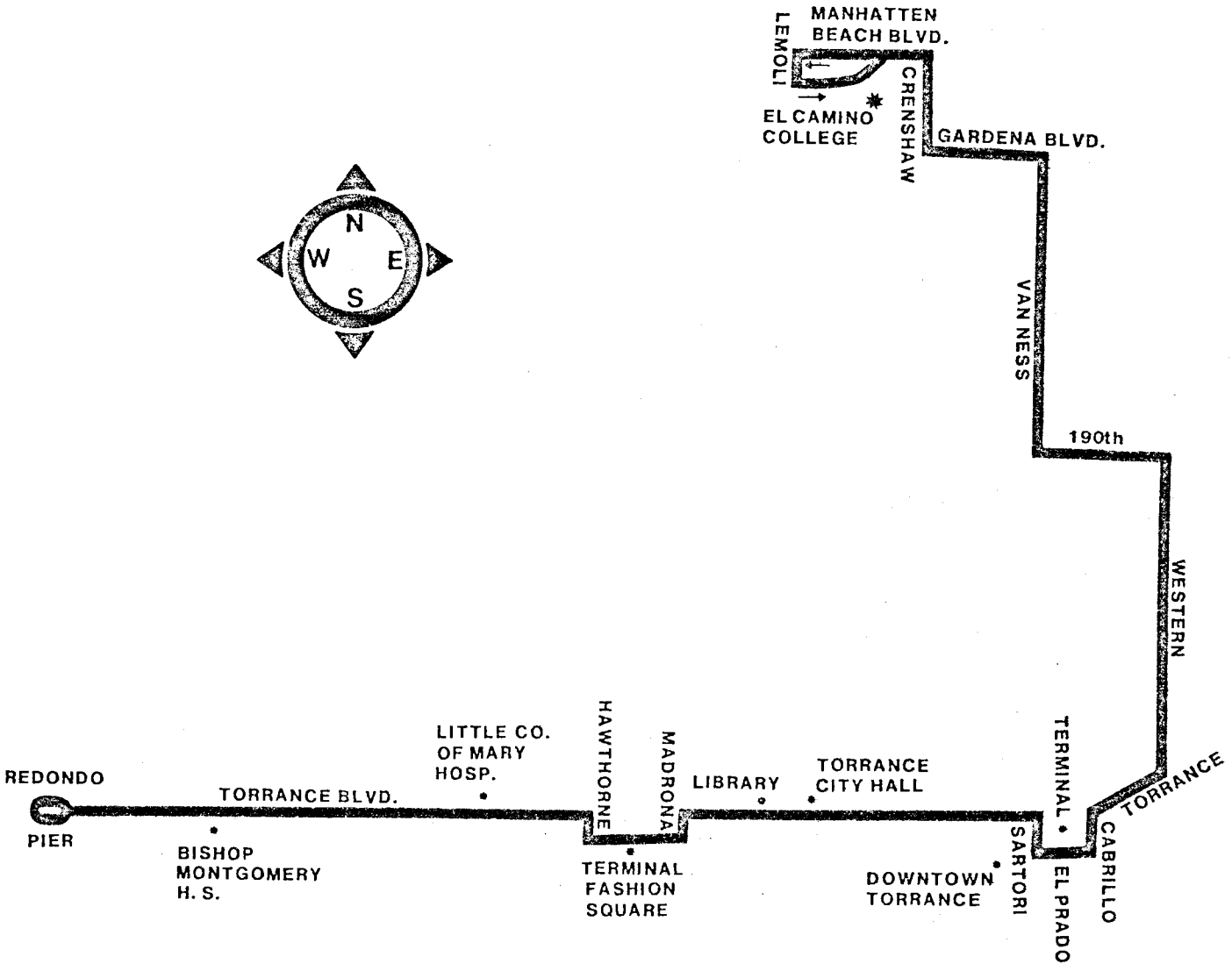


FIGURE 14

SBATS ROUTE 6-EL CAMINO COLLEGE- REDONDO PIER

PROPOSED



Torrance Route 5 - El Camino College - Pier

This route provides local service to El Camino College, Torrance, Lomita and Redondo Beach on an hourly basis. It is actually doing the work of two routes because of its reverse loop design joining two legs. This type of route yields wide coverage at modest cost but generally provides poor quality service from the consumer's viewpoint. Two-way service is infrequent (every other hour) and travel time from one leg to the next is long.

The major generators observed on this route are Redondo Beach and the Pier, Bishop Montgomery High School, Fashion Square, Rolling Hills Plaza, several schools along Arlington, downtown Torrance and El Camino College. Ridership is moderate but steady along Torrance, Arlington and Crenshaw. Transfer activity occurs at Fashion Square, Torrance Terminal, Crenshaw and PCH, and Crenshaw and Redondo Beach Blvd.

This route carries large numbers of elementary, secondary and college students during certain trips. Other riders include seniors, shoppers and workers.

Travel patterns are clearly divided on this route. Activity is usually either local to the Crenshaw leg or local to the Torrance and Arlington leg. There is little through travel from one leg to the next.

Consequently, it is recommended that the Torrance Route 5 be shortened to serve only Redondo Beach and Lomita via Torrance. Service would begin at Redondo Pier, continue east on Torrance to Hawthorne, south to Fashion Way, east to the terminal (no layover), east to Madrona, north to Torrance, east to Cabrillo and Torrance Terminal (no layover), south to Marcelina, southwest to Arlington, south to PCH, west to Crenshaw and Rolling Hills Plaza, north to Airport Drive, east and south to PCH, east to Arlington (Narbonne) then reversing direction of the route back to the Pier. This routing is shown in Figure 15.

One bus would be assigned to serve this line with 60 minute headways. Two-way service would, therefore, be more frequent. The route should be operated locally for greatest operational economy and is referred to as SBATS Route 5.

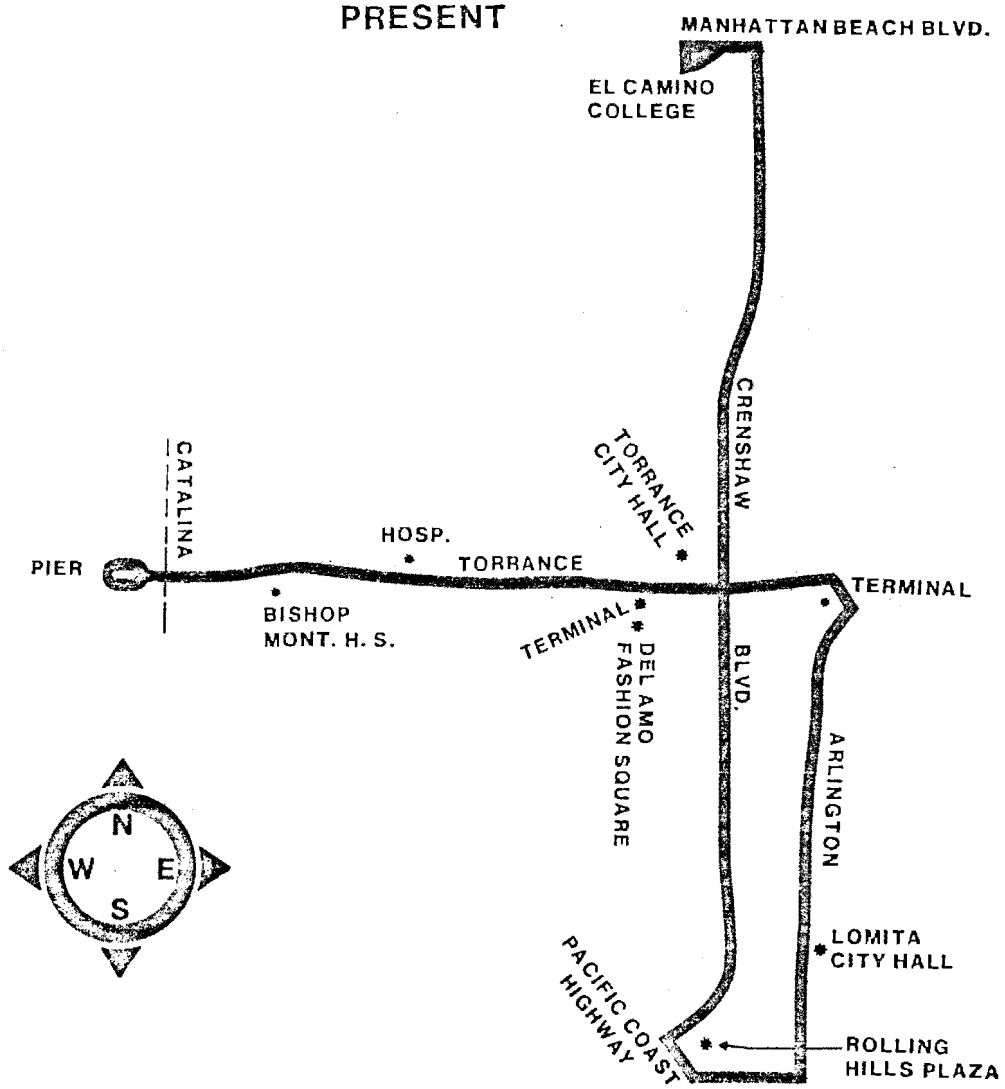
The Crenshaw leg of the present Torrance Route 5 should not be connected to the Torrance-Arlington leg since the activity is basically unrelated. Those few individuals requiring through travel will have alternative transit service. Those people in the Redondo Beach and east Torrance areas will have better service to El Camino and areas in northern South Bay via three new alternative routes, the Riviera Route 4, Route 2 to Los Angeles, and El Camino-Pier Route 5. Each line is presented in detail under separate sections.

In order to retain transit service along Crenshaw, it is recommended that SCRTD Route 85 which currently serves Crenshaw and terminates at South Bay Center, be extended south to PCH and Rolling Hills Plaza. This is a logical extension of a regional line. It would provide better direct north-south service through South Bay from Hollywood while absorbing demand for local transportation to locations along Crenshaw.

FIGURE 15

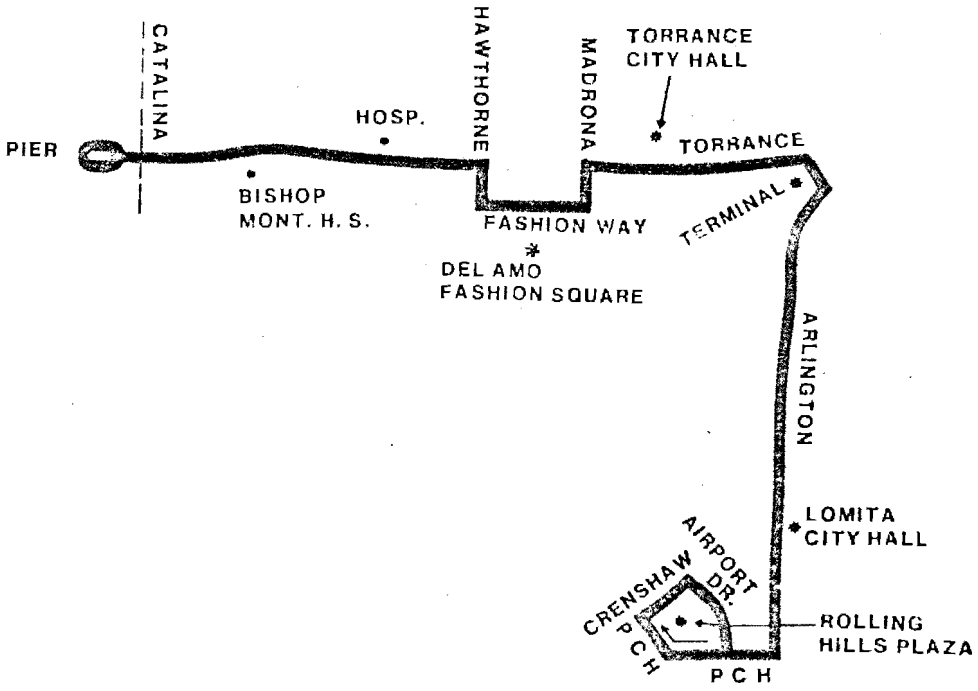
TORRANCE ROUTE 5-LOMITA-TORRANCE-REDONDO-EL CAMINO

PRESENT



SBATS ROUTE 5-REDONDO PIER-LOMITA

PROPOSED



Splitting the current Torrance Route 5 into its two basic parts could produce operating efficiencies and reduce considerably the cost to the local operator. The new Route 5 would experience better productivity. The regional extension could open up new service between Torrance and Los Angeles.

Service recommendations for SCRTD Route 85 are reviewed below.

Hermosa Beach City Bus

Hermosa Beach provides free bus service for its residents. A minibus, equipped with wheelchair lift, circulates through the densely populated residential and commercial areas of Hermosa. Two loops are operated, southbound and northbound, each one beginning and ending at Hermosa Avenue and Pier.

The routing circuitously covers most of the city as can be seen in Figure 16. Service on both loops operates one-way but crosses itself at several intersections.

Ridership is very weak and sporadic, especially considering that the service is free to riders. Several trips experience no riders. One afternoon trip carries several students but that is the only trip when ridership totalled greater than four. Users of this route are primarily seniors.

Aside from downtown Hermosa Beach near the Pier, the grocery stores are the major generators.

It is recommended that this service be discontinued because it is extremely expensive and unproductive. The local operator should not assume responsibility for this costly and underutilized service. Finances which support this service should be rechanneled into alternative transit services.

It is recommended that Hermosa Beach coordinate its monies, resources, and transportation needs with an area-wide coordinated demand responsive service proposed for South Bay and described later in this chapter. Demand for special and local transit service in Hermosa Beach can best be met through such a program.

Gardena Route 1 - Los Angeles

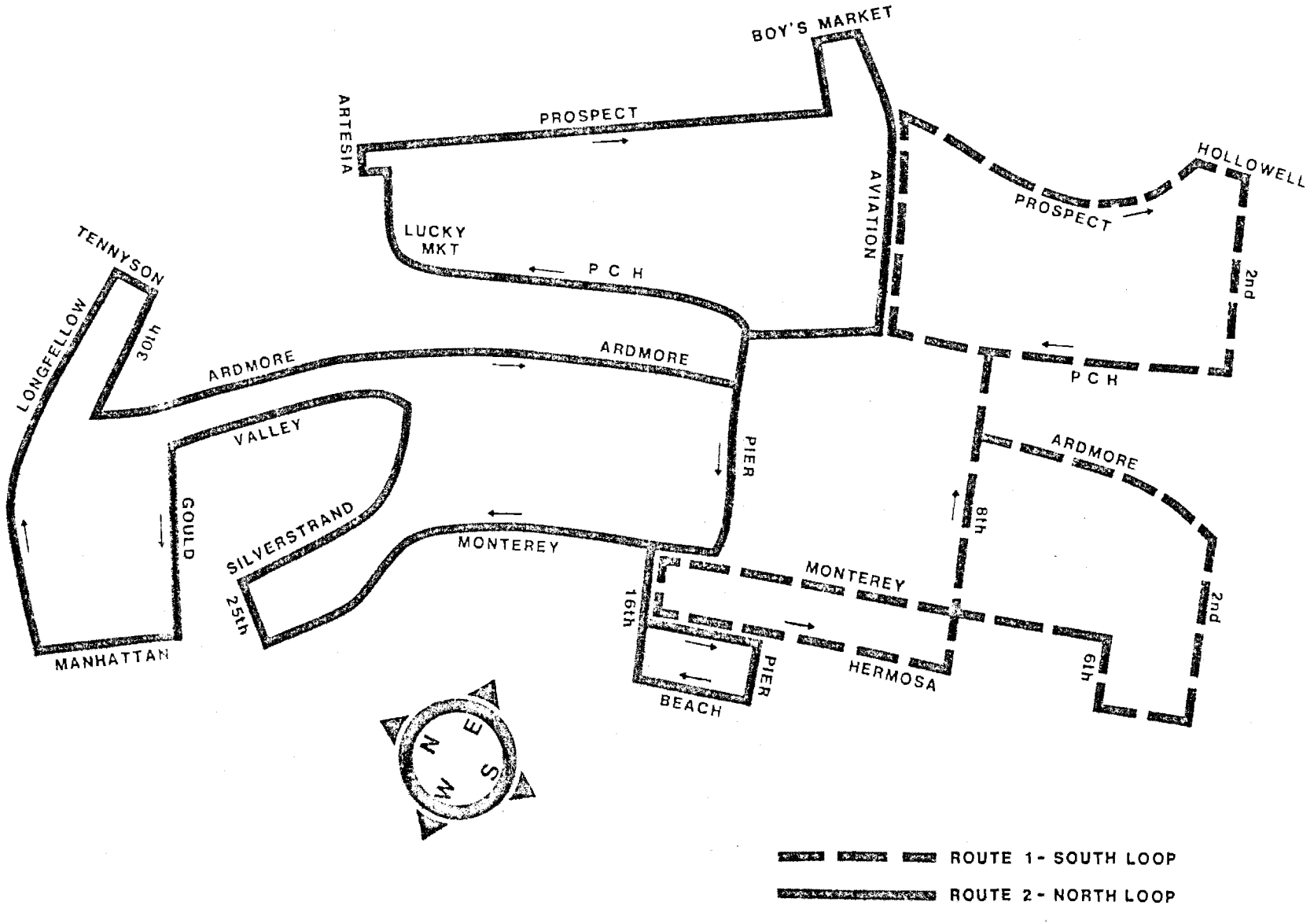
This route connects downtown Los Angeles with the City of Gardena. The major generators in Gardena are the five card clubs, on Vermont and Western Avenues and the Los Angeles C.B.D. To meet the demand, this route operates 24 hours a day, with 15 minute peak service, a base of 30 minutes, and night service of about 60 minutes.

Besides serving the clubs, passengers travel to Los Angeles to work and shop. Due to the large number of transfers at Gardena and Vermont, it is probable that many people are transferring to Torrance Route 1, destined for Harbor General Hospital.

There is also a significant amount of local activity on this route. Passengers often board or alight along Compton (especially at Crenshaw), and

FIGURE 16

HERMOSA BEACH CITY BUS
PRESENT
PROPOSED-DISCONTINUE



along Western. Ridership on this route is consistent, and it is Gardena's most productive route.

No major changes are recommended, because the route is direct, and carries passengers through its entirety. However, it is recommended that the terminus of this route be extended northward to Hawthorne Plaza via Hawthorne Boulevard. This extension should generate additional activity along the western portion of the route. The local carrier (SBATS) should continue to operate this route since no benefits would be gained otherwise, and it can be operated more economically in this manner. Service hours and frequency would also remain as they are, because present demand does not indicate the necessity to change service. The routing of the extended service is shown in Figure 17. This route is referred to as SBATS Route 3.

Running time adjustments may be necessary since southbound trips frequently arrived at El Segundo a few minutes early. Passengers would then have to layover at El Segundo and Vermont before reaching their destination.

Gardena Route 2 - Western Loop

This route consists of one large loop utilizing Vermont from Imperial to Gardena, Gardena to Normandie, then 190th Street to Western and north on Western to Imperial. Formerly this was two routes, but they were connected at 190th Street and at Imperial to form one loop for operational economy. The route which operates in both directions and has 30 minute headways, is depicted in Figure 18.

Three major transfer points are easily identified. They are: Western and Imperial, Vermont and Imperial, and Vermont and 120th Street. It can be assumed that riders are transferring to and from SCRTD Rts. 84, 6, and 353 which bisect Imperial, and Route 359 on 120th Street. Another major transfer point is Gardena and Vermont. It is likely that these transfers to Gardena Route 3 and Torrance Route 1 are traveling to Compton and Harbor General Hospital respectively.

The major generators are the card clubs, South Los Angeles College on Imperial, and Gardena High School on Normandie and 182nd Street. Although McDonell Douglas and Martin Marietta have large facilities on 190th Street, very few people used the bus for transportation to those locations.

Western Avenue houses strip development, commercial property, and some residential areas on the side streets. Vermont has mostly lower middle income single family dwellings on the east side and card clubs on the west.

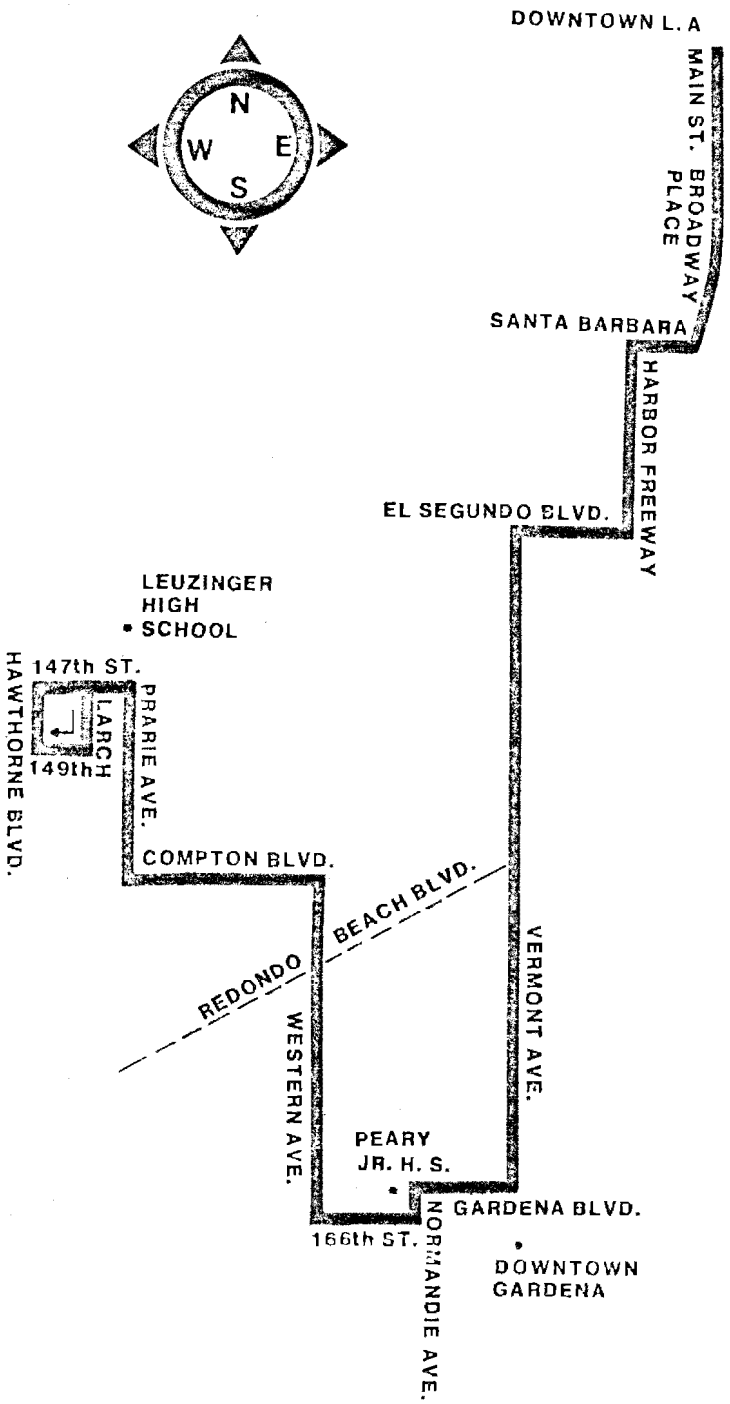
Most passengers travel north or south on Western or Vermont. However, there are several passengers who cross from one main arterial to the other via Imperial. (Few, if any passengers cross the south end of the loop.) This pattern is well enough established to prohibit breaking apart the loop. However, ridership around the loop does not require 30 minute service. Two major changes are proposed:

1) Service around the loop should be reduced from 30 minute to 60 minute headways. One bus, not two, should travel in each direction. This would accommodate passengers wishing to cross the loop.

FIGURE 17

GARDENA ROUTE 1
LOS ANGELES

PRESENT



SBATS ROUTE 3
LOS ANGELES VIA GARDENA

PROPOSED

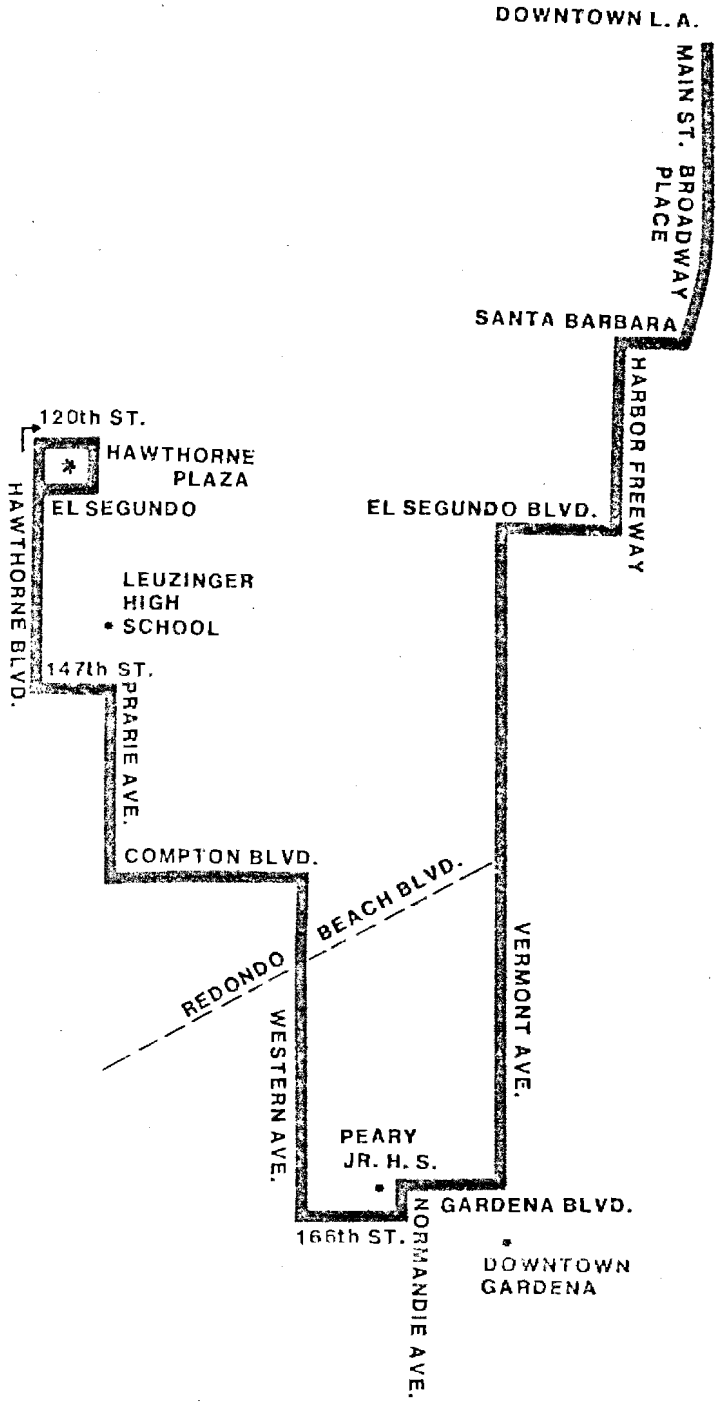


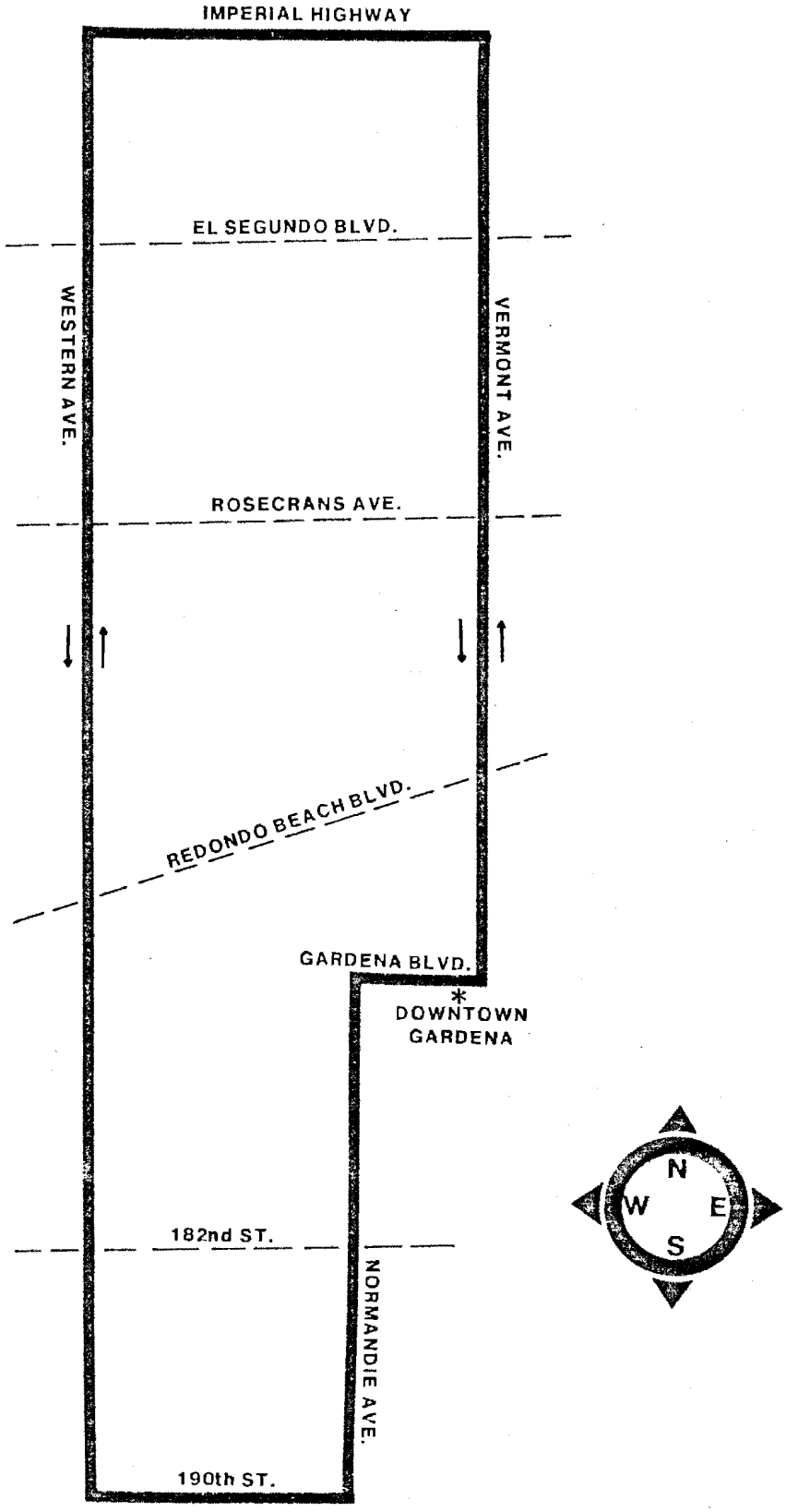
FIGURE 18

GARDENA ROUTE 2

PRESENT

SBATS ROUTE 7 WESTERN - VERMONT LOOP

PROPOSED (SAME ROUTING)



2) To accommodate the busier trunk lines and satisfy the demand for north-south through riding, two SCRTD routes should be extended. Route 84 (Western), which now terminates at Western and Imperial, should be extended south to Anaheim, and from there should loop to Vermont, Pacific Coast Highway, and return to Western.

Route 6 (Vermont) which terminates at 120th Street, should be extended to Gardena, and from there should follow new routing to Carson Mall and beyond. (Details of the routing from Gardena and Vermont can be found under the heading SCRTD Route 6.)

These changes could eliminate the need for the hundreds of transfers being made where SCRTD currently terminates prematurely. 30 minute service would still be offered the majority of people who travel north and south on Western and Vermont.

This local route will continue to be operated locally as SBATS Route 7.

As the ridership schematic in Appendix B illustrates, there is a large number of riders along Normandie. These are school-related trips which are made during short periods in the morning and the afternoon. To accommodate the heavy school traffic, the new schedule for Route 2 should be coordinated with the school shifts. If there is a problem transporting schoolchildren, school trippers should be considered.

Gardena Route 3 - Compton

Route 3 connects the City of Compton with downtown Gardena and continues (via a large bubble) to El Camino College. Activity on this route behaves like two routes, with downtown Gardena being the natural dividing point. Trail check sheets verify that rider activity is centered from Gardena to Compton, or Gardena to El Camino College. The two segments show little or no relationship to one another. On most trips the bus would empty at or near Gardena and Vermont. Occasionally, a trip may have one or two passengers riding through. Ridership on this route was not good, considering it has 30 minute service all day.

The segment from Compton to Gardena is characterized by lower income residential property. Compton generates several passengers who ride to Gardena, or some point on Alondra. Two commercial areas on Avalon and Central attract a number of Compton route users.

The other segment, from Gardena to the College, is very indirect, however, it does serve a useful purpose. Robert Peary Junior High School, at 162nd and Normandie, is the largest single generator on this half. Students board along Van Ness, 135th, and Normandie, and ride to the school. Others continue to downtown Gardena, where there is another school.

El Camino College attracts students from the Van Ness area. The indirectness of the route probably discourages potential riders from the Compton end of the route as ridership totals at the college are not as great as might be expected.

Normandie bisects several shopping and medical centers, which attracts riders from Gardena. Transfer points are located on Rosecrans and Redondo Beach.

As the schematic in Appendix B illustrates, this route is not very productive. Major changes are proposed for Route 3 to take advantage of the natural break at Gardena and Vermont, economize operations, and make it more attractive.

The route should be split at Gardena and Vermont. It is proposed that SCRTD Route 114 discontinue its 60 minute service south of Compton and Willowbrook to Carson, and assume the present #3 routing to Gardena and Vermont, then continue to El Camino College. Routing for the new Route 114 will be the present route to Compton and Willowbrook, to Gardena and Vermont via present routing of Gardena Route 3, then to Normandie, to Redondo Beach Boulevard, to Crenshaw, to Manhatten Beach Boulevard, to Lemoli, to Manhattan Beach Boulevard, and reverse outbound routing. The proposed extended Rt. 114 is compared to the present Gardena Route 3 in Figure 19.

Interlocking these routes could present several benefits. A new service area would be opened to people in Lynwood. Students would have a faster, more direct route to El Camino College, which should improve its attractiveness. Redondo Beach Boulevard with its many stores, businesses and medical centers, is a new generator which could also provide access to several transfer points.

Present ridership patterns would not be disrupted because so few passengers currently ride past Gardena and Vermont. Some may have been destined for El Camino College anyway, so their service would be improved. Operationally this route would be more efficient, since it can be tied in easily to the present 30 minute service.

The other section of this route (from Gardena and Vermont to El Camino College), would become part of a new route, which should be locally operated. Details for that service can be found under the heading SBATS Route 4, Riviera, El Camino, Gardena.

Gardena Route 5 - Rosecrans/Redondo Beach

This route has a short, horseshoe shape. It travels east and west on both Redondo Beach Boulevard and Rosecrans, and north/south on Vermont. Route 5 is used primarily by senior citizens for shopping trips to one of the commercialized strips. A few people ride to the card clubs on Vermont. Figure 20 describes the routing of Gardena Route 5.

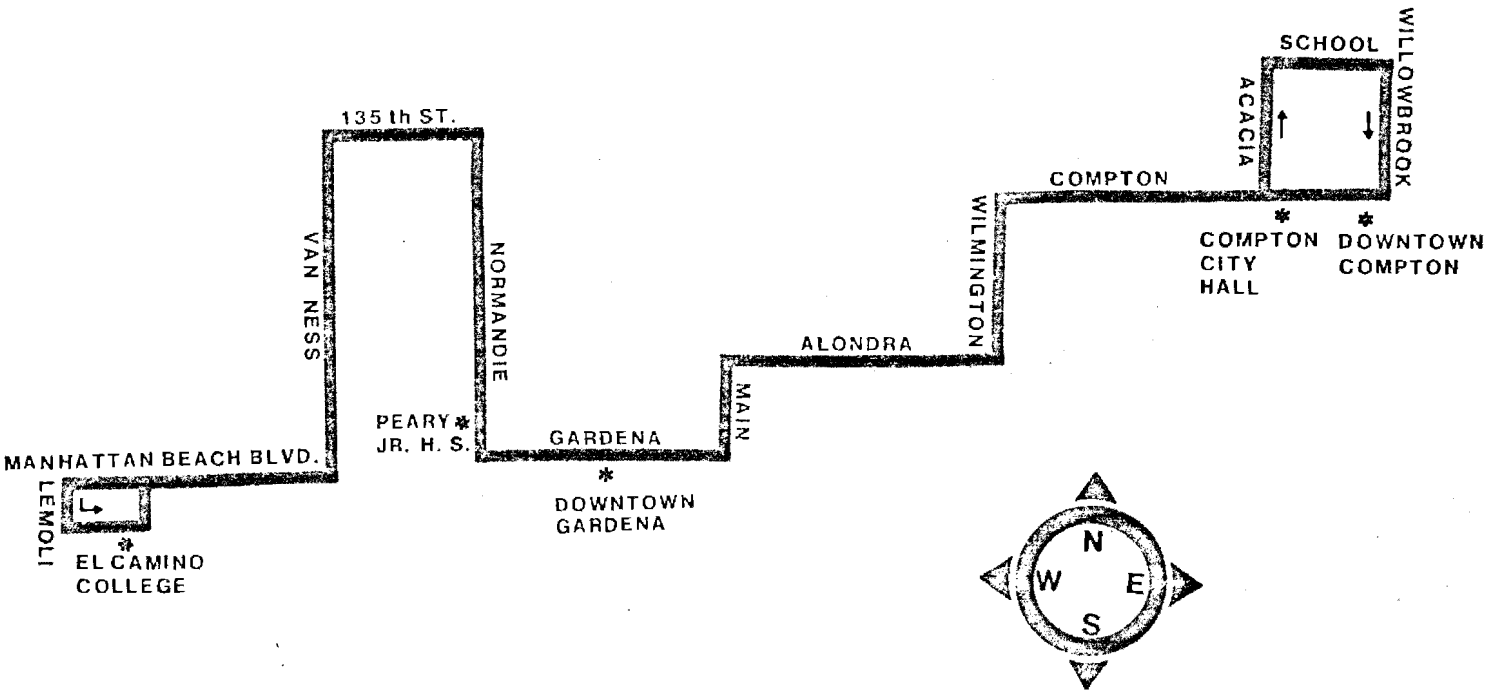
Ridership is extremely poor, even though there is 30 minute service all day. This could be attributed to the indirectness of the route and the lack of significant generators. Seniors usually travel on one of the "strips", riding very short distances because they can ride free. Few passengers ride from one arterial to the other.

Running time is excessive for this short route. Drivers arrive at the midway point on Vermont several minutes early, and layover there.

FIGURE 19

GARDENA ROUTE 3

PRESENT



SCRTD ROUTE 114

PROPOSED

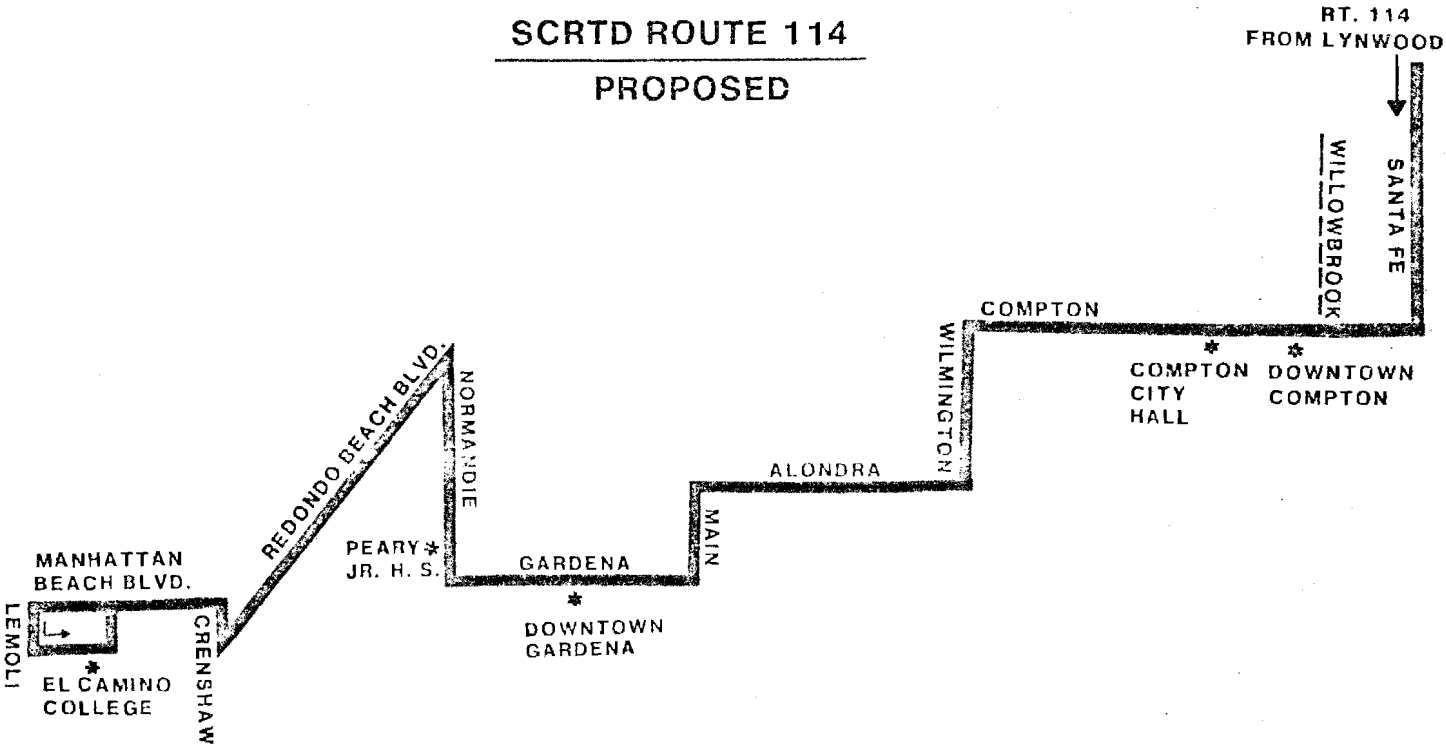
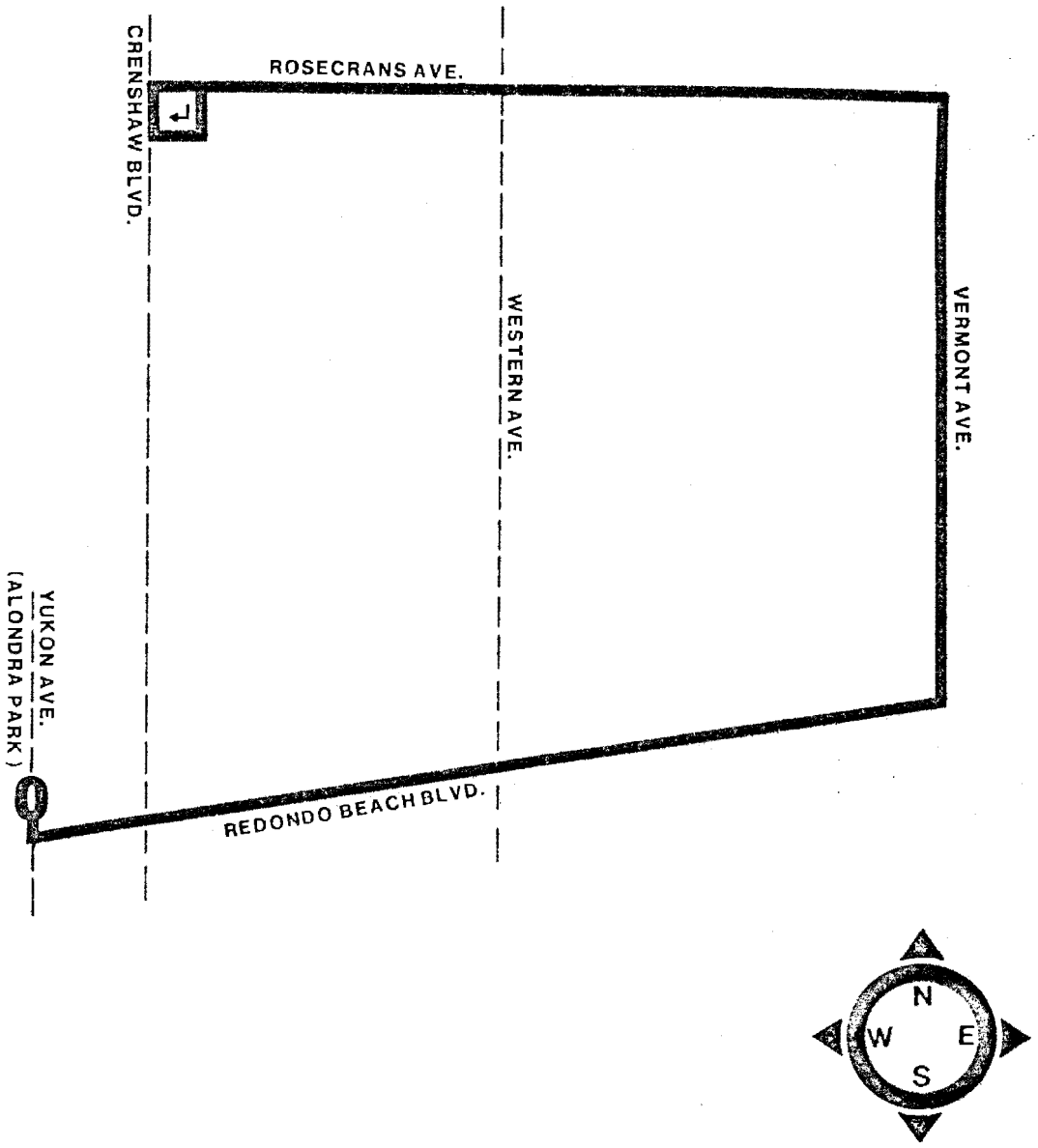


FIGURE 20

GARDENA ROUTE 5

PRESENT



PROPOSED-DISCONTINUE

Since this route demonstrated such poor ridership and was used primarily to shuttle people a few blocks, it is recommended this route be discontinued.

Several other alternatives would become available. SCRTD operates 30 minute service the entire length of Rosecrans (Route 840). Redondo Beach Boulevard would be served by a new locally operated route. This route would begin at Gardena and Vermont and operate via Gardena, to Normandie, to Redondo Beach Blvd., to Artesia, to Kingsdale, to Grant, to Inglewood, to 190th, to Anza, to Torrance, to Madrona, to Fashion Square terminal, and to the present Riviera Hills route. The service area on Redondo Beach Boulevard would be greatly expanded by the proposed route. New generators would be available, such as El Camino College, South Bay Center, Fashion Square, and Riviera Village. Passengers should find this route a suitable alternative to the present Gardena Route 5.

Regional Service - Route Recommendations

SCRTD Route 5 - Hawthorne

This route originates in downtown Los Angeles (at the County jail) and travels as far as South Bay Center. Buses arrive at Hawthorne and Broadway every 10 minutes, where alternating buses either turn back or go through to South Bay Center. South Bay Center, therefore, receives 20 minute service.

It is proposed that Route 5 be extended to operate the present Torrance Route 3 to Long Beach. Since Route 3 already terminates at 172nd and Hawthorne, it presents itself as a natural extension of SCRTD Route 5.

The project team recommends every fourth bus at Hawthorne and Broadway be extended to Long Beach, thus providing 40 minute headways. Currently Route 3 has 30 minute headways during the peak (recently implemented), and 60 minute headways in the base and nights. Forty minutes headways should provide adequate service since figures show the current 30 minute peak service is not fully utilized.

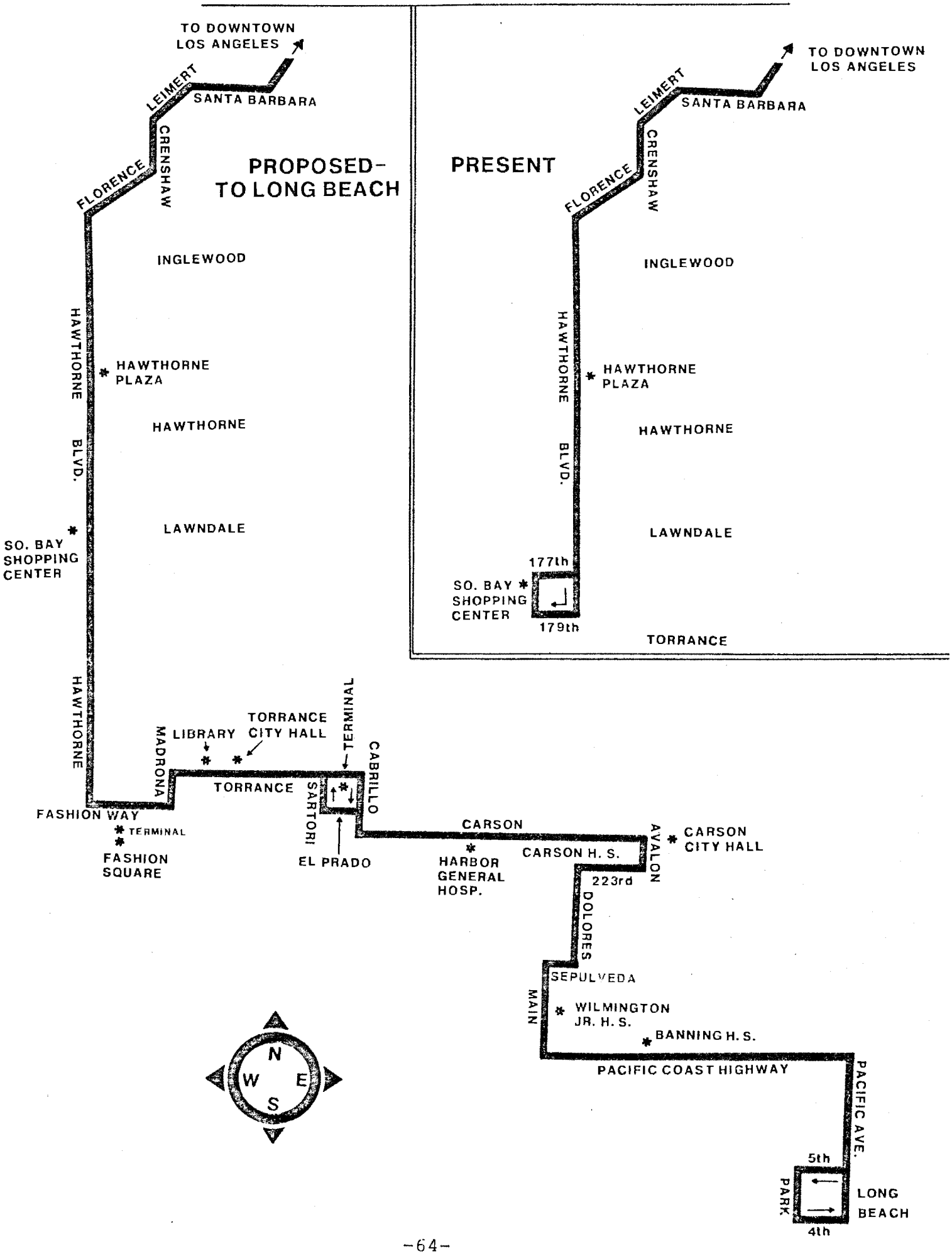
Routing to Long Beach would be revised slightly and is displayed in Figure 21. Present routing would be followed to Torrance and Crenshaw. From there it would continue on Torrance to Cabrillo (and the Torrance Terminal), instead of diverting on Crenshaw, Del Amo, and Van Ness. From the terminal, present routing would be utilized to Long Beach.

The "bubble" on Del Amo demonstrated poor ridership, and made the route more indirect. Some of those passengers are close to Crenshaw and could be served by SCRTD Route 85. The actual number of inconvenienced riders would be very few. (Note: When Torrance added peak buses, they also elected not to operate on the Del Amo bubble.)

Significant operating economies could be realized by combining these two routes. Layover periods from the two routes could be reduced to just two layover locations. Since running time can be combined efficiently, layover time which is presently "given away" would be minimized considerably. Finally, new through routing possibilities are opened to improve customer convenience.

FIGURE 21

SCRTD ROUTE 5 - HAWTHORNE - UNION STATION



SCRTD Route 6 - Vermont Extension to Carson

Currently Route 6 operates on Vermont from Eagle Rock to 120th Street where it makes a U-turn and lays over. Most of the headways are 10 minutes.

The survey team recognized the need to add service to the City of Carson. It was determined that Route 6 would be a logical extension since it terminates rather inconveniently at 120th Street, and would provide a direct route between Los Angeles and Carson.

From 120th and Vermont, approximately every third bus should be extended south on Vermont to Victoria, (190th Street) east to the busway at the California State campus, return to Avalon, continue south to the north entrance of Carson Mall (by Sears), to Dominguez, west to Avalon, south to Carson, east to Bonita, south to 220th Street, west to Avalon, and reverse outbound routing. On the northbound trip, however, the bus should enter Carson Mall from Dominguez and exit via the north entrance by Sears. All other Route 6 buses should terminate at Vermont and El Segundo, instead of 120th Street. The new routing of the extended Route 6 is shown in Figure 22.

Several benefits can be realized by adding this new service.

1) Carson, which presently has very little bus service, would have new service to Carson Mall, California State-Dominguez Hills, residential areas, and a direct line to Los Angeles. Presently, there is one express route on Avalon (Route 810), which uses the Harbor Freeway. However, passengers cannot travel to local destinations, and have fewer transfer possibilities via Route 810.

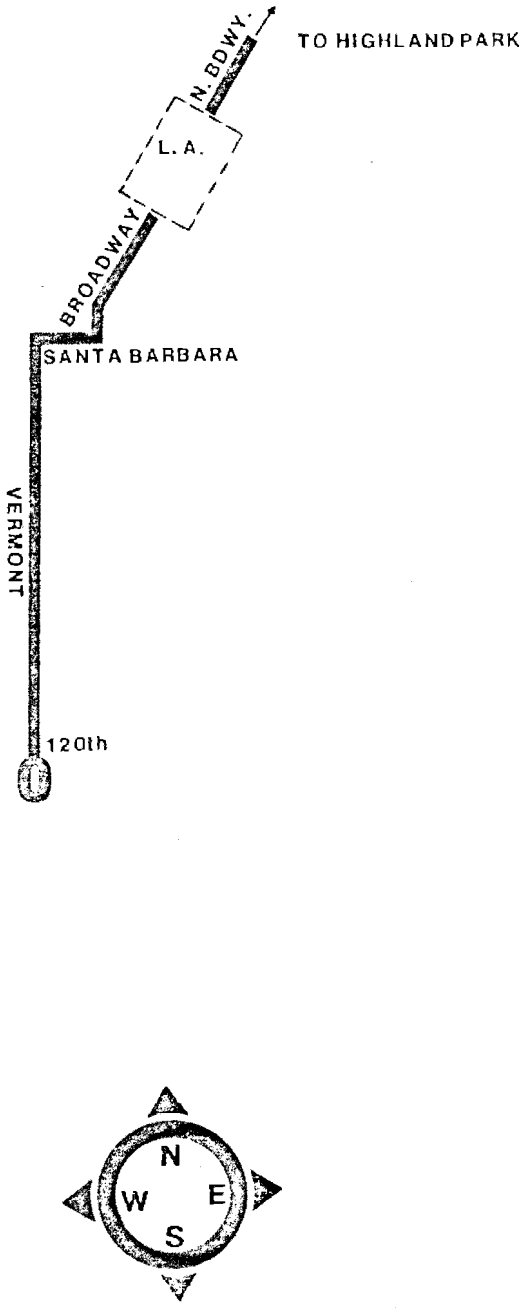
2) Transfer possibilities could be greatly expanded. With the Carson extension, a person would be able to transfer at Vermont and El Segundo to the new SBATS Route 3 which is a crosstown and serves downtown Los Angeles. An important transfer is opened at Vermont and Gardena. Here a rider can get on the new SBATS Route 1 to continue south on Vermont to Harbor General Hospital. (Harbor General has proved to be the largest generator in South Bay according to data collected by the survey team.) At Gardena and Vermont, a transfer could be made to the proposed extension of SCRTD Route 114, which follows present Gardena Route 3 routing to Compton. Other crosstown routes, e.g. SCRTD Route 838 Rosecrans, and Route 846 Artesia, would be accessible. Finally, a transfer could be made at Avalon and Carson to the proposed SCRTD Route 5 to Long Beach, presently the Torrance Route 3.

It is recommended that the other Route 6 buses terminate at El Segundo, also to facilitate transfer opportunities. Political boundaries currently force Route 6 to terminate at 120th Street, about eight blocks from El Segundo, where several important transfers can be made. They are: SCRTD Route 838 El Segundo; SBATS Route 2 to Crenshaw, El Camino College, South Bay Center, and Fashion Square; SBATS Route 3 to the card clubs and Lawndale. At the present time patrons have to walk eight blocks to make such transfers, which very few people are willing to attempt. This short extension would enhance the quality of transit service, without regard to political boundaries.

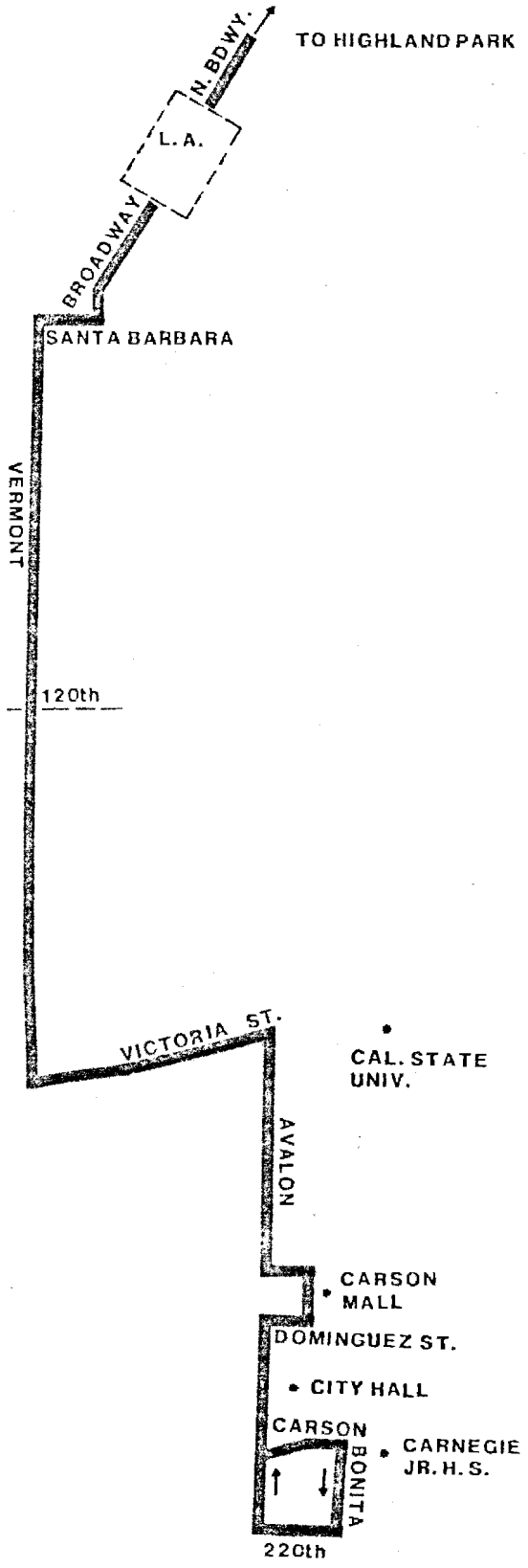
FIGURE 22

SCRTD ROUTE 6-HIGHLAND PARK-VERMONT AVE.

PRESENT



PROPOSED — TO CARSON



As an alternative to this recommendation, SCRTD Route 353 could be extended to provide this service with Route 6 service only continuing south as far as El Segundo Blvd.

SCRTD Route 84 - Western

This route connects Hollywood with the northern boundary of South Bay, utilizing Western Avenue the entire trip. Political boundaries currently require the bus to terminate at Imperial and Western. To continue south on Western, passengers must walk across Imperial, and transfer to the Gardena Route 2 bus, which arrives every half hour. Gardena travels on Western as far as 190th Street. Then the Torrance Route 4 continues to Torrance Boulevard, and Torrance Route 2 covers Western from Sepulveda to Lomita. The total coverage of Western (which is a productive corridor) is therefore done patchwork style.

The ridership schematic for Western on Gardena Route 2 shown in Appendix B, demonstrates the desire transit riders have to ride through on Western. Total activity at Western and Imperial is 239 boardings and alightings, indicating a major transfer point. Although SCRTD data was not available for this particular route, it is assumed there was also a considerable amount of transfers to Gardena Route 2 from that route.

To satisfy the obvious demand to travel through on Western Avenue, it is recommended that Route 84 be extended to Kaiser Hospital. Specifically, routing should be: Western south to Anaheim, east to Vermont, north to Pacific Coast Highway, west to Western, and reverse outbound routing, as illustrated in Figure 23.

Along Western the proposed SBATS Route 7 - Western and Vermont loop should have loop service reduced to every 60 minutes. (A more detailed discussion of Gardena Rt. 2 can be found under the heading "Gardena Route 2 - Loop.") The SCRTD Western line would fill in between the loop headways in order to continue 30 minute service along the Western corridor. The existing Route 84 is on 10 minute headways, so every third bus would continue south on Western to deliver 30 minute service south of El Segundo to Kaiser Hospital.

Converting Western to a regional line would accommodate local and regional travel demands, and economize total operating costs. Kaiser Hospital would be a new generator, and new transfer options would be available to San Pedro, Long Beach, and Carson Mall. Riders would also save the time and inconvenience normally spent to transfer. The quality of the route should be enhanced significantly and substantial ridership increases should be realized.

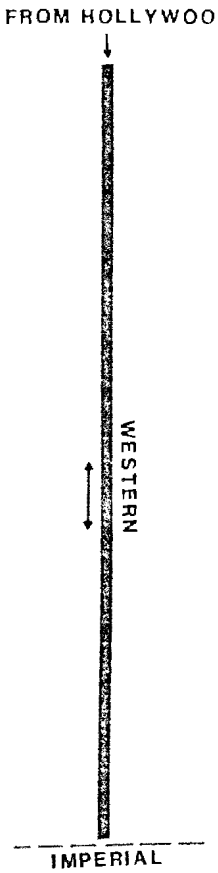
SCRTD Route 85 - Crenshaw

The Crenshaw route begins at Coliseum and La Brea, operates via La Brea to Hollywood and south on Crenshaw to Rosecrans. Rosecrans is a turnback for most buses, however, approximately one of every three buses continues to Artesia and South Bay Center. This leg receives 30 minute headways, with the trunk operating with a 10 minute frequency.

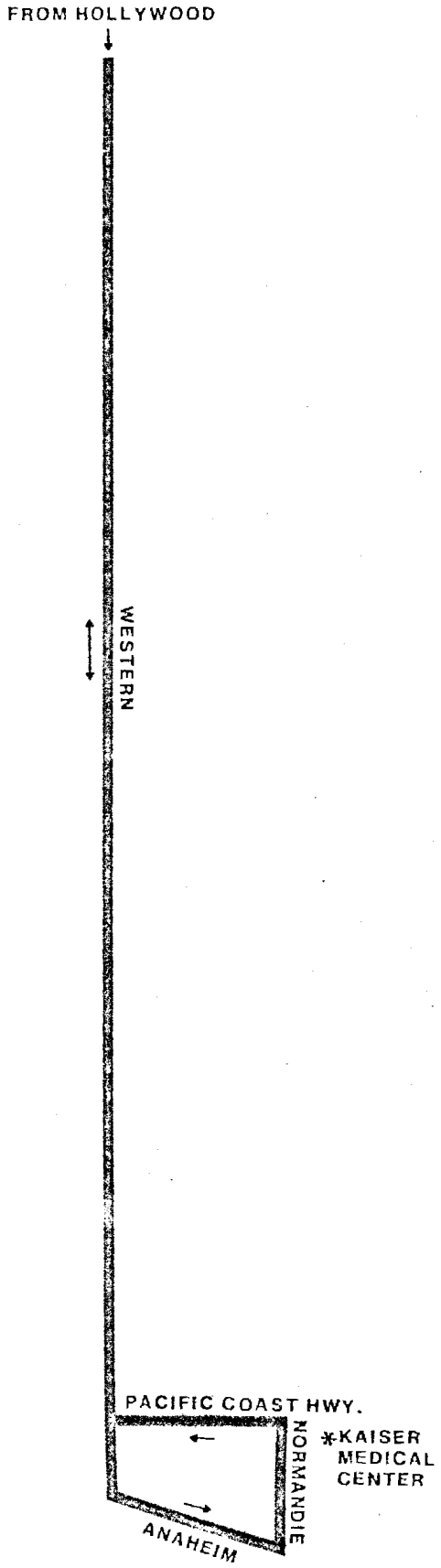
FIGURE 23

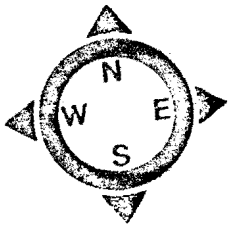
SCRTD ROUTE 84-WESTERN AVE.

PRESENT



PROPOSED -TO ANAHEIM





For maximum efficiency and improved quality of service, it is recommended that the Crenshaw route be extended to Rolling Hills Plaza on Pacific Coast Highway. Exact routing would be: Crenshaw to Airport Drive (which circles behind the Plaza), to Pacific Coast Highway, to Crenshaw and reverse outbound routing. This routing is shown in Figure 24.

Of the two buses per hour which currently branch to South Bay Center from Rosecrans, one should continue to operate as at present, while the other would go south on Crenshaw to Rolling Hills Plaza. This change produces a 60 minute service to South Bay Center and a 60 minute service on the new extension on Crenshaw. Examination of SCRTD data revealed a marked drop in activity from Artesia and Crenshaw to South Bay Center, therefore justifying the reduction in service frequency to the center.

This new extension would replace service provided by Torrance #5 on Crenshaw. Although Torrance #5 is interlocked with service on Arlington and Torrance Boulevard, there is no relationship between rider activity on Crenshaw, and activity on the L-shaped portion of this route. Passengers would either ride north/south on Crenshaw, or ride from Arlington to Torrance. People would be able to travel on Crenshaw (which is a very active street) to their destination without having to make a transfer. Service frequency would not be changed, inasmuch as Torrance currently operates 60 minute service on Crenshaw, and this headway would be maintained.

The Arlington and Torrance Boulevard portion of Route 5 are addressed in the section, "Torrance Route 5".

SCRTD Route 96 - Normandie

Route 96 originates in Hollywood and travels on Normandie to Rosecrans where it terminates. Again, political boundaries deter this line from extending to a more natural terminus. SCRTD "white sheets" support this statement, showing almost 400 passengers boarding and alighting at Rosecrans. Too many riders are being forced to transfer to reach their destination.

On weekdays, Route 96 generates over 1800 daily rides from Imperial Highway to Rosecrans on Normandie. Ninety percent of that activity originates or terminates outside South Bay. This is indicative of the amount of regional travel between South Bay and the Los Angeles metropolitan area.

The controversy regarding the termination point for Route 96 warrants some attention. The existing terminus for Route 96 is Normandie and Rosecrans where the route loops around to Halldale west of Normandie and lays over on 141st Street. The City of Gardena desires, and has formally requested, that the route terminate at Normandie and El Segundo. This location is approximately one mile north of Rosecrans.

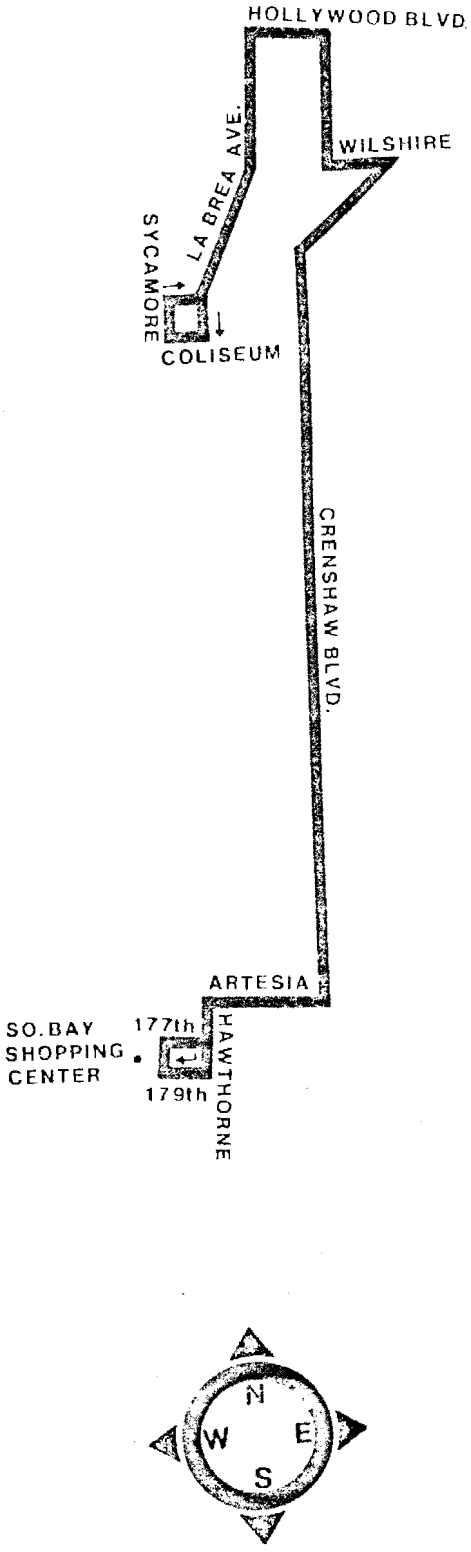
In order to determine the true magnitude of the demand for continued, through transit service south on Normandie, ATE conducted a special check of the current Route 96 service at Normandie and El Segundo.

The number of passengers on each SCRTD Route 96 bus passing this intersection on March 9, 1979 between 8 a.m. and 6 p.m. was recorded and

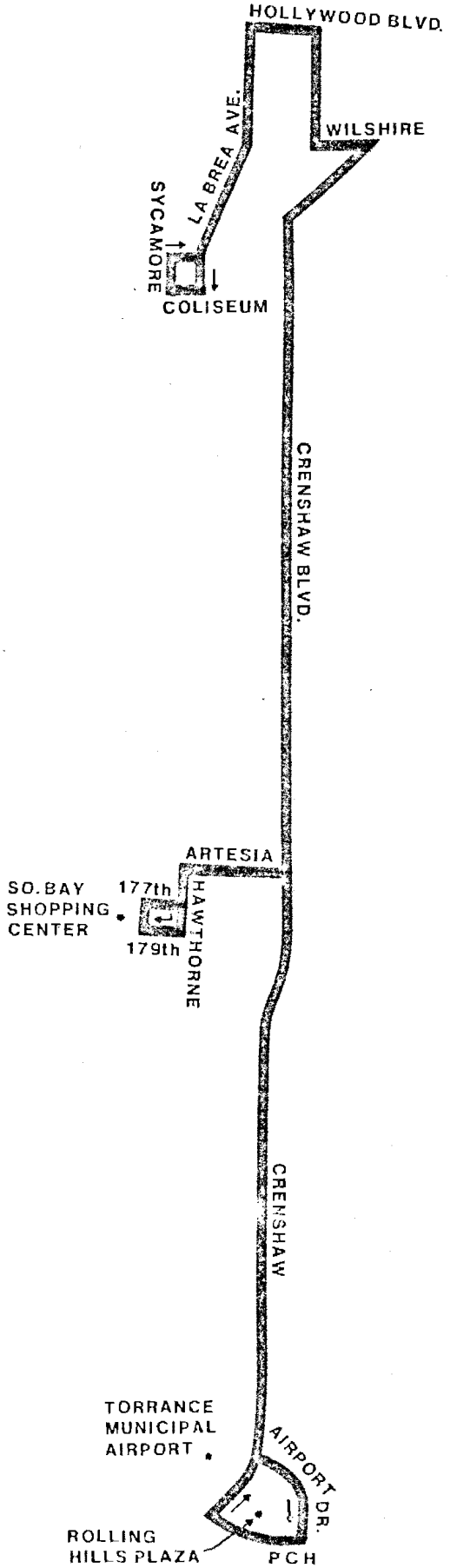
FIGURE 24

SCRTD ROUTE 85-CRENSHAW-VINE-LA BREA

PRESENT



PROPOSED -TO PACIFIC COAST HWY.



the results are shown in Table 8. From that table, it can be seen that 419 riders were using Route 96 service south of El Segundo Boulevard during that 10 hour period. From that information, it can be estimated that in excess of 637 transit riders would use Route 96 south of El Segundo over the course of an entire day.

Should Route 96 be forced to terminate at El Segundo Boulevard, these 637 people would be required to transfer to Gardena service, causing a needless inconvenience. Consequently, the ATE team does not support the suggested cut-back of Route 96 service at El Segundo Boulevard.

Additionally, the study team recommends that Route 96 be extended to Harbor General Hospital. Specifically, routing would be: Normandie to Carson, to Vermont, to 220th St., to Normandie and reverse outbound routing. Service frequency would continue to be 20 minutes on the trunk and 40 minutes to Harbor General. This route extension is depicted in Figure 25.

Harbor General is one of South Bay's largest generators. It attracts over 26,000 people per month, plus about 3,000 employees who commute there every day. Most of the patients and visitors going to Harbor General are lower income and are "transit dependents". Adding to the problem is limited parking. The hospital has only 800 parking spaces, plus whatever off-street parking is available. Given these conditions, it is believed that this extension will prove valuable and could add significantly to the transportation opportunities to and from South Bay.

This extension would also supplement service on the Gardena Route 2 (new SBATS Route 7) loop which is proposed to be reduced from 30 minute to 60 minute headways. Schoolchildren who live near Normandie would have new opportunities to get to Gardena High School on 182nd Street.

SCRTD Route 849 - Harbor City - San Pedro and Route 114 - Carson - Compton - Lynwood

Route 849 connects the San Pedro and Harbor City communities to Harbor Junior College via Western and PCH and to Harbor General Hospital via Vermont. Buses run on 30 minute headways Monday through Saturday and on 60 minute headways Sunday and holidays.

Ridership is moderate but consistent throughout service hours with the exception of the last 8 north and southbound trips at night that experience a combined total of 17 riders.

Activity is dispersed throughout the route. The largest generator is the hospital for both medical and work trips. Its location is also a transfer point between Route 849 and Torrance Routes 1 and 3. Heavy transit activity also occurs at Pacific and 7th in San Pedro, at Western and PCH, at Vermont and Sepulveda and at Normandie and Carson. The activity generating from Pacific and 7th takes place primarily during off-peak hours.

The college attracts relatively few users of Route 849. Kaiser Medical Center attracts slightly more riders than the college.

TABLE 8

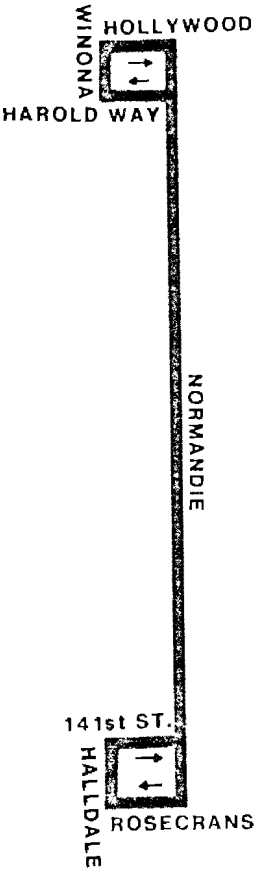
PASSENGERS RIDING PAST NORMANDIE AND EL SEGUNDO
ON S.C.R.T.D. ROUTE 96 3/9/79

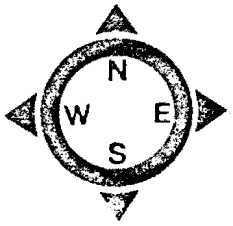
Northbound		Southbound	
Time	Passengers	Time	Passengers
7:50a	6	8:05a	18
8:07a	2	8:20a	12
8:25a	3	8:47a	4
8:46a	3	8:48a	1
9:06a	1	9:14a	0
9:27a	0	9:28a	4
9:46a	3	9:49a	2
10:05a	0	10:12a	2
10:27a	3	10:28a	1
10:46a	2	10:52a	8
11:06a	2	11:15a	6
11:27a	5	11:30a	2
11:46a	2	11:46a	3
12:07p	3	12:12p	3
12:25p	1	12:33p	2
12:46p	3	12:58p	5
1:05p	2	1:14p	1
1:29p	3	1:33p	5
1:46p	3	1:52p	3
2:03p	9	2:11p	8
2:22p	6	2:31p	4
2:37p	7	2:58p	6
2:55p	4	3:18p	11
3:06p	7	3:42p	6
3:20p	5	4:08p	10
3:35p	20	4:13p	7
3:56p	31	4:38p	10
4:12p	25	4:49p	5
4:25p	21	5:07p	4
4:38p	15	5:29p	8
5:00p	25	5:48p	5
5:05p	4	5:48p	5
5:34p	16		
5:47p	3		
10 Hour Total	248	10 Hour Total	171
Full Day Projection:	345	Full Day Projection:	292

FIGURE 25

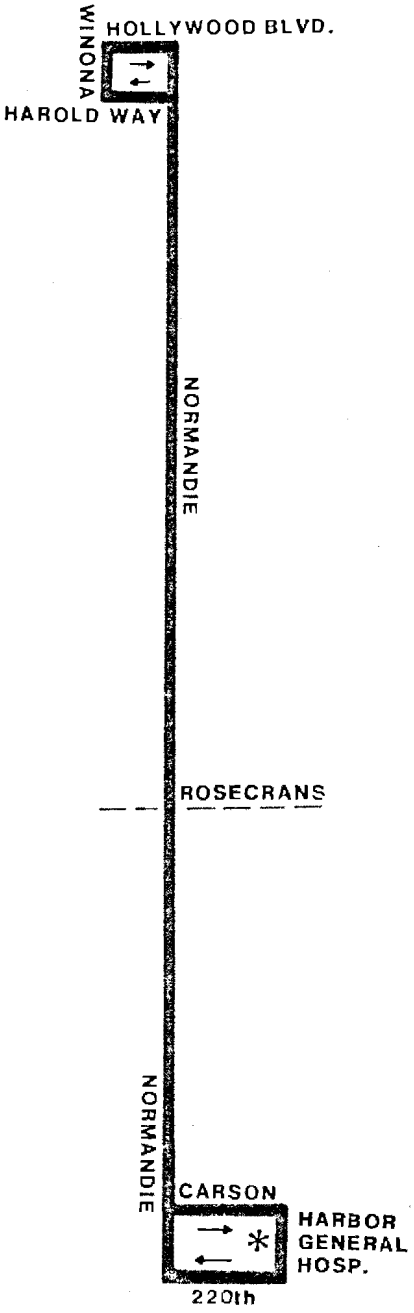
SCRTD ROUTE 96-NORMANDIE AVENUE

PRESENT





PROPOSED - TO HARBOR GENERAL HOSP.



Each trip is presently witnessing underutilization. Half-hour frequency is more than adequate for current demand. In order to attract more riders, the route should be extended to serve other nearby residential areas and link them with additional desirable destination points. One neighboring area which is currently under served is the City of Carson. Extending Route 849 east to Carson offers potential benefits for Carson, San Pedro and Harbor City residents as well as SCRTD.

Portions of Carson are currently served by SCRTD Route 114. This route joins the north and north-central residential areas of Carson to downtown Compton, California State-Dominguez, and Lynwood. However, the Carson area served by Route 114 only generates 22 percent of the line's activity.

Ridership is low from this area partly because of the less frequent, hourly service, as compared to half-hour service offered to Compton and Lynwood. But a more important reason is that the route fails to connect the Carson residents with desired destination points. Carson Mall is a big traffic generator in the city, yet Route 114 does not provide good access to the Mall. The existing route network in South Bay links few Carson and other residential areas with the Mall.

The majority of activity on Route 114 exists between Compton and Lynwood. The intersection of Compton and Willowbrook receives the most activity of any point along this line. The location is in downtown Compton, plus it is a transfer point between several SCRTD lines and Gardena Route 3. A significant decline in activity occurs south of Compton and Willowbrook. Compton and Willowbrook is a natural dividing point for Route 114.

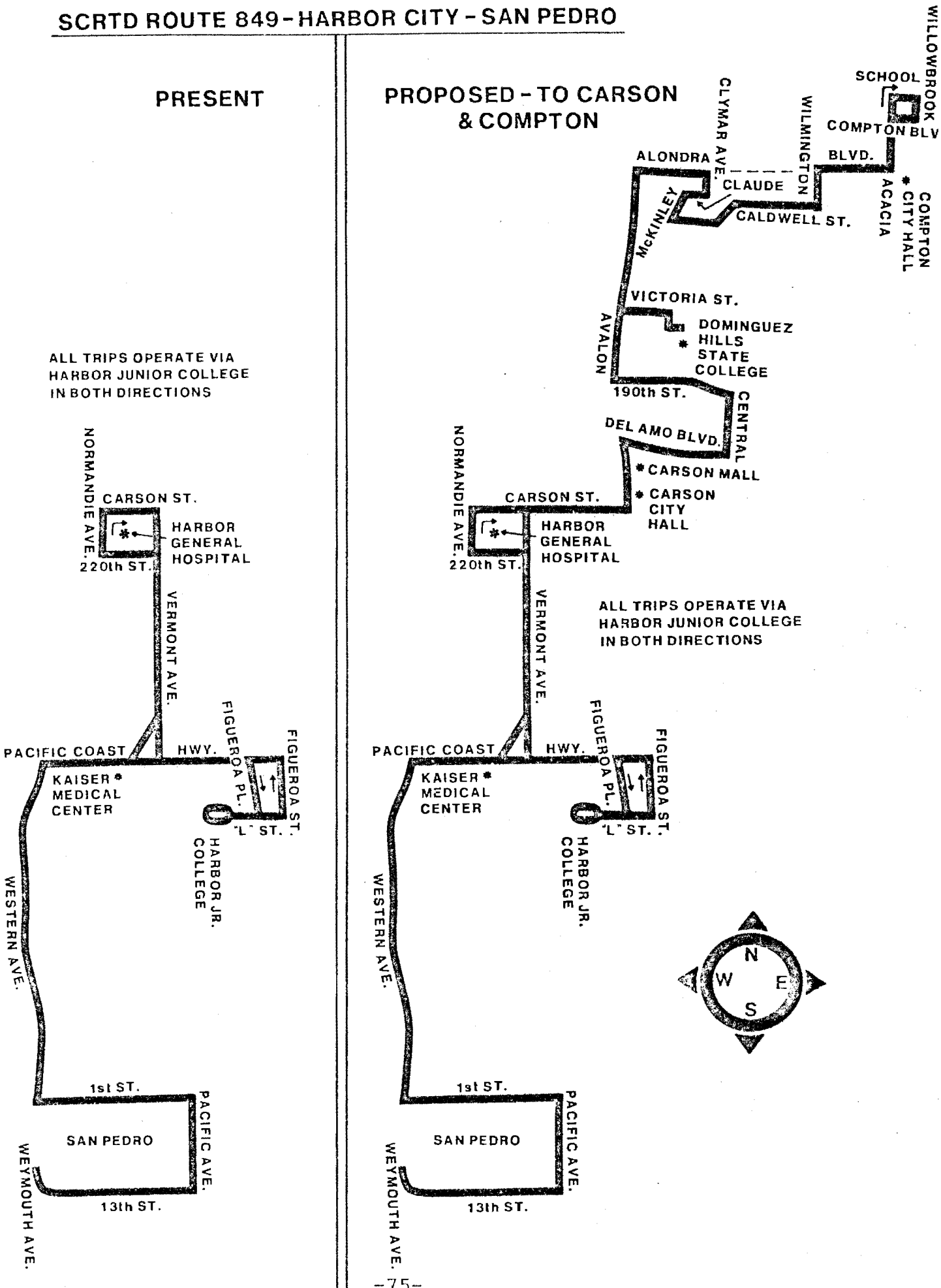
Because the ridership on the south segment of 114 is fairly unresponsive and has little relationship to the north segment and because under-utilized Route 849 is in close proximity to Carson Mall, it is proposed that Route 849 be extended to take over the south portion of Route 114 as far north as downtown Compton. Routing for the new 849 would follow the existing route to Harbor General Hospital, continue east to Avalon, north to Del Amo, east to Central, north to 190th, west to Avalon, north to Victoria, west to Tamcliff, turns around at California State Dominguez to Victoria, west to Avalon, north to Alondra, east to Clymar, south to Claude, west to McKinley, south to Caldwell, east to Wilmington, north to Alondra, east to Acacia, north to School, east to Willowbrook, south to Compton (layover point), and reverse routing from Willowbrook and Compton. The new route is visually displayed in Figure 26.

SCRTD buses would operate this new route extension with 60 minute headways. This should be sufficient to satisfy demand and stimulate new ridership.

Restructuring for SCRTD Route 114 involves continuing the north segment from Lynwood to Compton with an extension to Gardena and El Camino College. The extension of this regional line would substitute local service currently provided by Gardena Route 3.

FIGURE 26

SCRTD ROUTE 849 - HARBOR CITY - SAN PEDRO



The route description for the new Route 114 is also detailed in a previous section on Gardena Route 3. Improvements in route performance and service quality are predicted through implementation of this new route design. Both the present and proposed Route 114 are included in Figure 27.

This new routing offers several benefits for South Bay. New areas of service would be available to residents of San Pedro, Harbor City, Carson and Compton via the merging of Route 849 and part of Route 114. A direct route from Compton to Harbor General Hospital and Harbor Junior College via California State-Dominguez and Carson would be possible. More destination opportunities and residential areas would be directly connected, thereby encouraging ridership and making Route 849 more productive.

Comparison of Complete Present and Proposed Fixed Route Systems

The complete proposed new fixed route transit network for the new South Bay Area Transit System is illustrated in Figure 28. The proposed expanded SCRTD system for South Bay is shown in Figure 29.

Figures 30 and 31 compare the total proposed transit service system for South Bay with the complete existing system. The proposed system offers much greater accessibility for several areas of South Bay and an overall higher quality of service for South Bay residents. Service generally would be more direct, more convenient, more frequent and could be operated in a more economical manner. Consequently, ridership increases should be expected while operating costs are minimized.

Special Services

In addition to the previously described fixed route service, SCRTD also operates a special subscription-type commuter service for South Bay residents known as the Bus Express Employee Program (BEEP). It is a demonstration project funded by the Department of Housing and Urban Development, and planned by consultants from Aerospace Corporation.

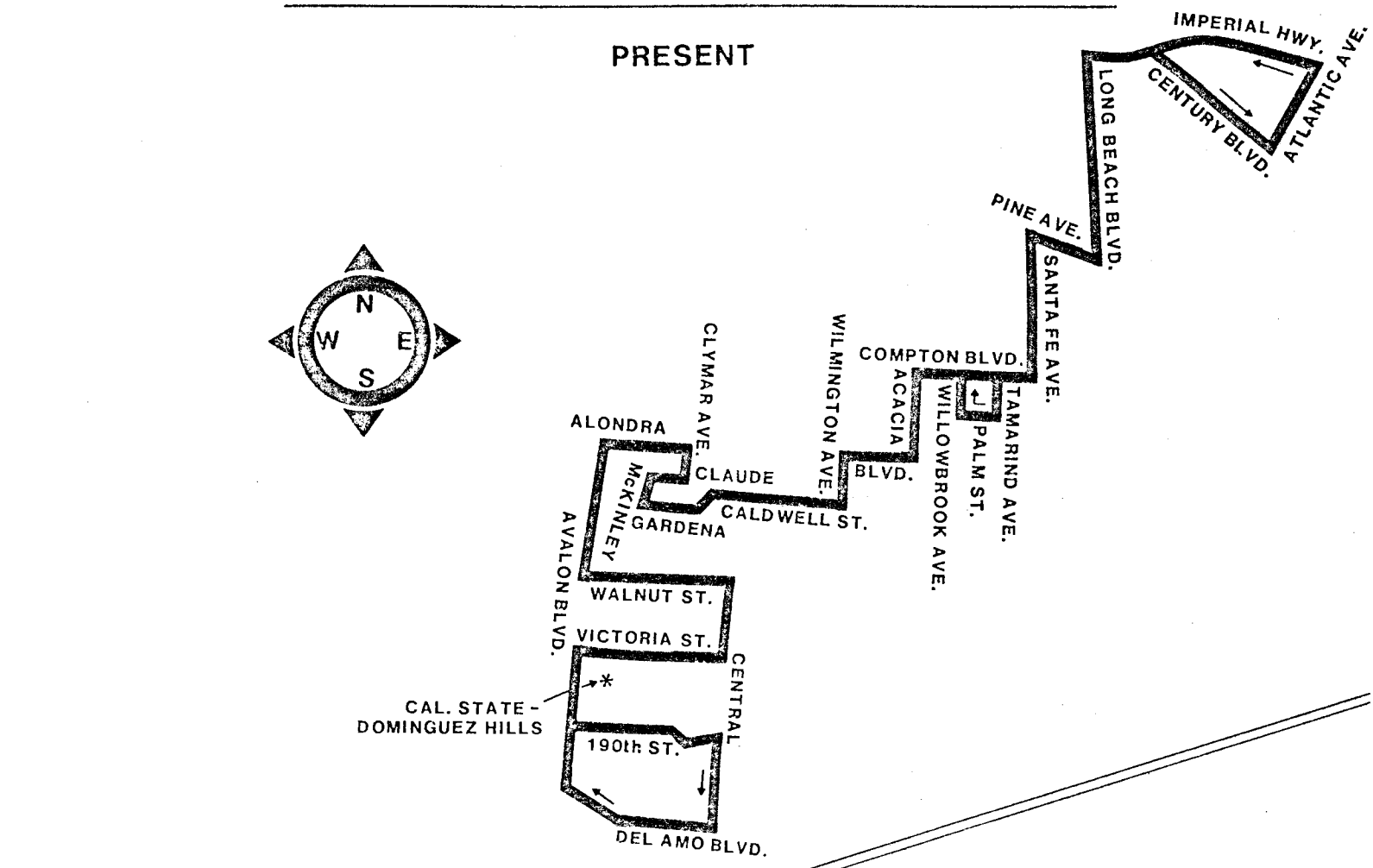
BEEP utilizes a unique scheduling methodology. Under this concept, a bus makes prearranged pick-up stops close to the commuter's origin. The bus then travels express to a particular employment center, and discharges the passengers to meet a specific work shift. Deadheading to another preselected group of pick-up points, the bus repeats the process and delivers employees to meet a later work shift.

Some features of BEEP are different from other commuter express services. One is the liberal fare payment policy. Passengers may pay cash fare, or purchase a monthly ticket book which can be charged to Visa or Master Charge. Any unused tickets may be refunded or credited to the individual's account.

Another unique feature is the method by which routes are designed. Employees at Rockwell International and Hughes Corporation were asked to complete a questionnaire giving their shift hours and the intersection nearest their residence. Routes were designed from these responses, but they are also periodically changed according to employee response.

FIGURE 27

SCRTD ROUTE 114 - CARSON - COMPTON - LYNWOOD



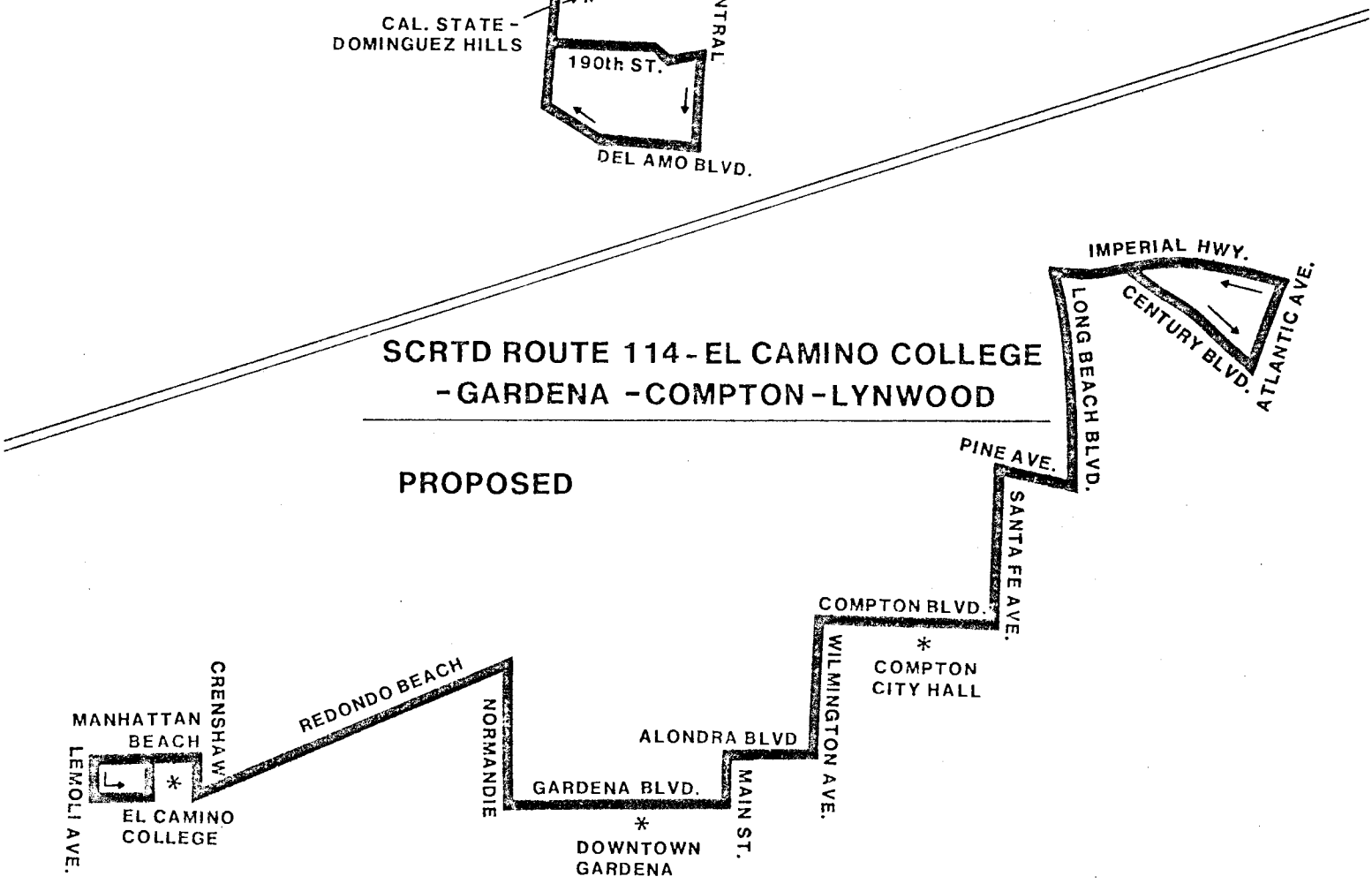


FIGURE 28

PROPOSED SOUTH BAY AREA TRANSIT SYSTEM

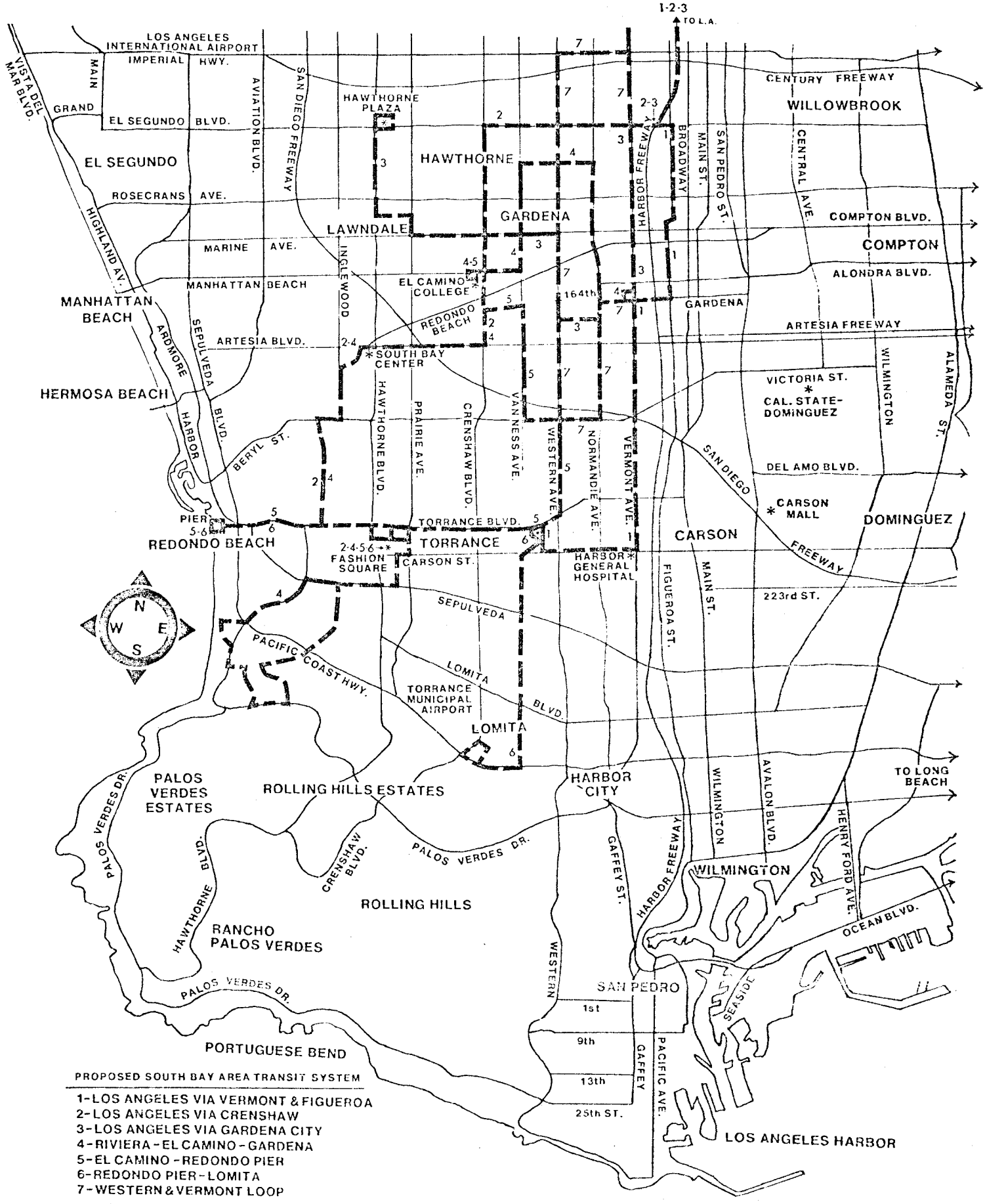


FIGURE 29

PROPOSED SCRTD SERVICE

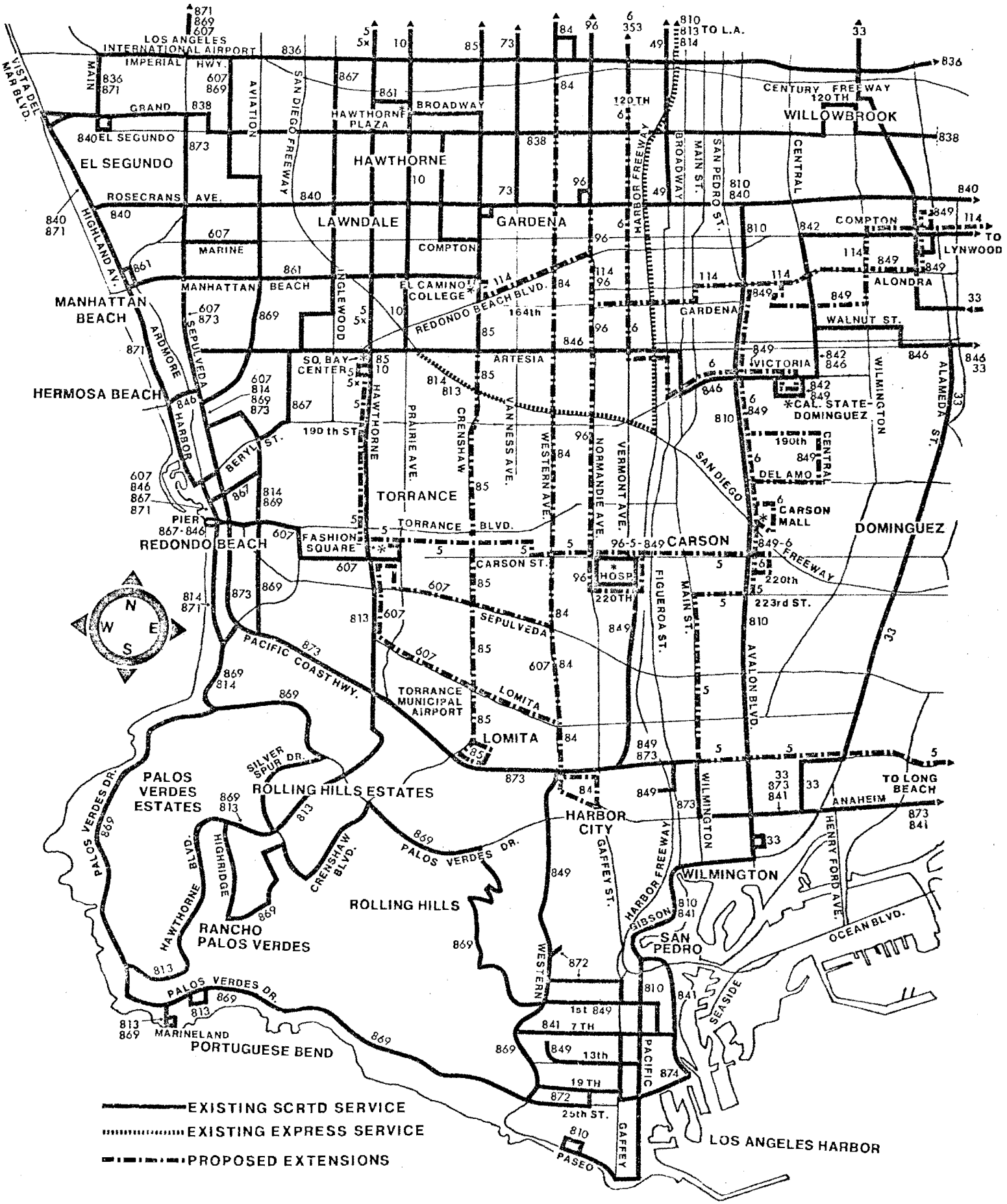


FIGURE 30

EXISTING MUNICIPAL - SCRTD ROUTES

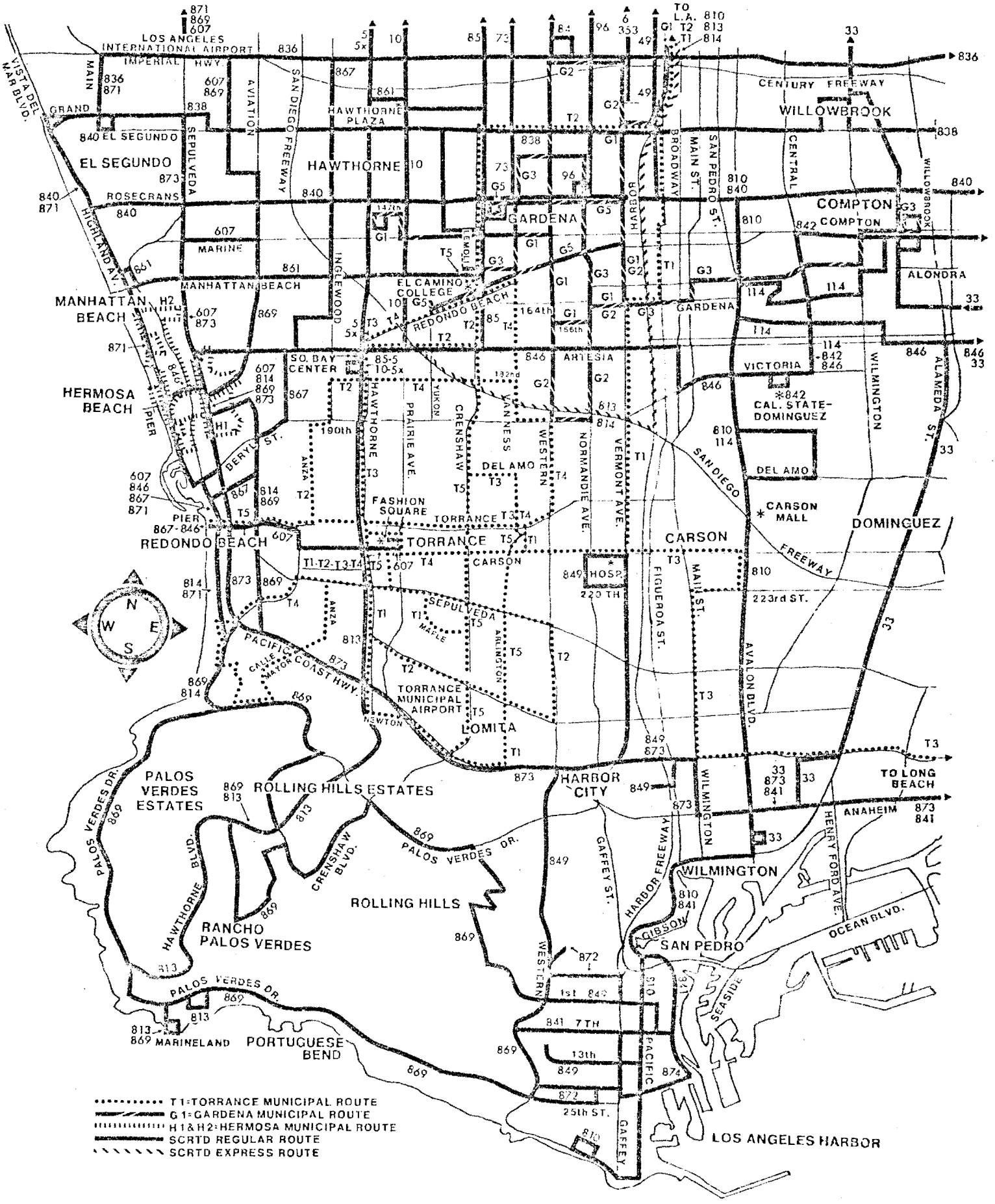
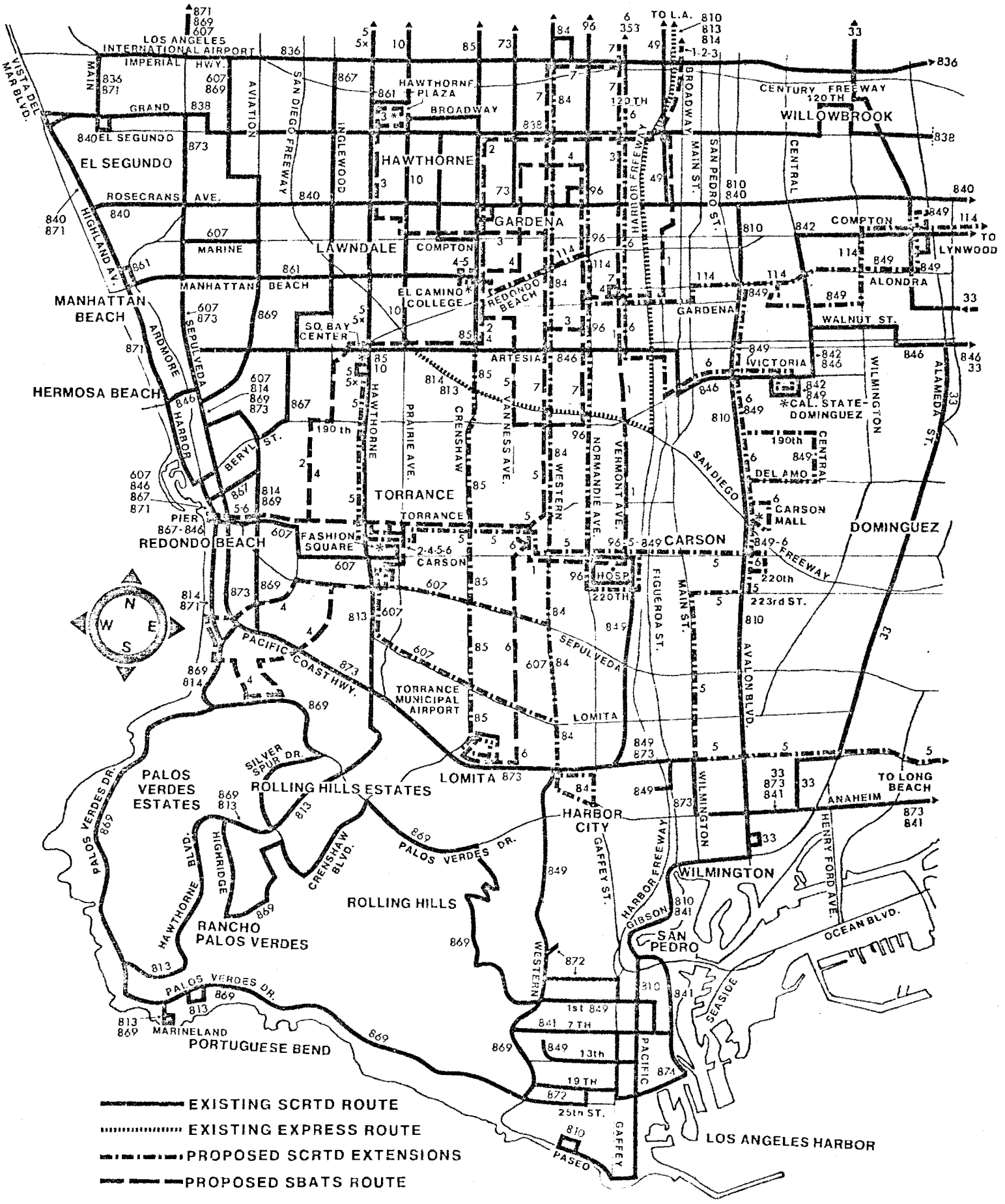


FIGURE 31

PROPOSED SBATS AND SCRTD ROUTES



To date, BEEP clearly has not been very successful. A spokesman for Rockwell International paints a rather bleak picture. He said of approximately 3500 employees, only 35-40 use BEEP. He stressed that Rockwell tries selling and refunding tickets there, etc.

There are several possible reasons for BEEP's lack of success. Employees' unpredictable schedules are difficult to coordinate with the one scheduled departure time offered per route.

Bus stops average about 10 miles away from work, and none extend past 19 miles. It is likely the person commuting up to ten miles cannot see any advantages in giving up his/her car for an inflexible, longer bus ride.

It is unknown how frequently BEEP routes change but this could be a deterrant. Since brochures mention that routes are under continual scrutinization, the potential user may fear the route is only temporary anyway. Compared to the security of the car, BEEP could appear unreliable.

Thus far, BEEP has been costly and generally unproductive. There would appear to be little justification for continuing the service in its current form when funding for this demonstration project expires.

The existing demand responsive services described in Chapter III designed to transport elderly and handicapped citizens in South Bay also leave much to be desired.

Although these systems are local in origin and operation and respond to the local needs of their clients, there are a number of weaknesses inherent in a multitude of varying and dispersed dial-a-ride programs. Each system is operating separately and serving individual areas. Budgets are relatively limited because a combination of revenue sources from local, state and federal agencies has not been effectively utilized. The destinations of users must be confined within the service area which is usually restricted to the city plus, occasionally, a few peripheral areas.

Individual transportation needs are only partially being met under the existing division and diversity of dial-a-ride services. The local policy of each system, to provide service to only a limited area, is a disadvantage directly affecting those eligible. As reported by a number of program directors and as a result of the dispersed land use development in South Bay, the demand for specialized transportation services to places located throughout South Bay clearly exists.

Furthermore, several of the dial-a-ride services are inaccessible to handicapped persons who have restricted ambulant abilities. Taxi-cabs and some of the city vehicles are not equipped to accommodate wheelchair passengers and other non-ambulatory persons. Taxi companies usually refrain from providing any door-through-door service or special assistance for people with physical handicaps.

These problems are in part due to the absence of effective coordination and centralization of resources and policy. Based upon the existing situation and needs of mobility-restricted individuals in South Bay, ATE recommends increased coordination of these resources under a single controlling body.

A coordinated regional service would provide opportunities to coordinate all aspects of service and operation. Specialized transportation to any location in South Bay would then be possible. Such a service could be controlled from the maintenance and administrative facilities of a single South Bay operator, thereby eliminating the need for additional facilities and administration. All dispatching, information, maintenance, and accounting activities should be centralized and conducted from the offices of a single operator.

The four existing demand responsive services operating their own vehicles should merge their maintenance, servicing, and operating efforts into a single facility which could provide services for the entire area. Those cities now contracting with taxi operators should continue to do so, but information and dispatching efforts should be coordinated with a single dispatching center which could serve all of the South Bay area.

The use of a combination of numerous funds available from local, state and federal agencies should be sought. The coordination of existing funds and the acquisition of additional monies would provide a larger and more effective financial base to support such an area-wide specialized transit service.

With regards to vehicle accessibility, it is recommended that all existing and future minibuses in the dial-a-ride service fleet have the capability to lift and carry wheelchairs. Drivers of dial-a-ride vehicles should be trained to assist boarding and alighting handicapped users.

All para-transit vehicles (except taxi contractors) presently in use by the city operators should be operated by the new unified coordinated service operator.

Consolidating and coordinating resources into a single centralized and area-wide transportation service would generate a more cost-effective service. Furthermore, a demand-responsive service which recognizes no boundaries within the South Bay area would better meet the demands of mobility-restricted residents.

The establishment of specific details for planning and implementing the proposed coordinated elderly and handicapped system requires further investigation that is beyond the scope of the work program for this project. Extensive additional effort should be concentrated upon determining the level of demand, size of operation, hours of service, fare structure, amount of expenditures necessary to deliver adequate service, and available funding sources.

V. INSTITUTIONAL ALTERNATIVES AND RECOMMENDATIONS

V. INSTITUTIONAL ALTERNATIVES AND RECOMMENDATIONS

Los Angeles County's South Bay community houses more than one million residents. This area currently has a substantial level of transit service provided by the Southern California Rapid Transit District and municipal operations in Gardena, Torrance, and Hermosa Beach. While the level of transit service is considered good, productivity on South Bay services has generally been lower than that in several other areas of Los Angeles County. With four fixed route transit carriers serving the South Bay area, it is easy to understand how the transit service network has become splintered. This study has been primarily concerned with the identification of route and schedule coordination opportunities that will improve the efficiency and economy of transit in the South Bay area. Another important question concerns the proper institutional organization necessary to operate these transit services for the South Bay communities. Three alternatives have been identified as:

a. Continuation of the status quo;

b. Consolidation of all service into the Southern California Rapid Transit District.

c. Development of a separate sub-regional transit entity;

This section of the report subjectively evaluates these alternatives.

Decision Criteria

Before analyzing institutional alternatives it was important to establish certain decision making criteria. These criteria are outlined in Chapter II. Additionally, for this particular element of the study, the following objectives were of importance in the selection of the best institutional alternative for South Bay:

- Design and develop a transit network that would enhance and improve overall personal mobility in the South Bay area.

- Constrain overall operating costs and subsidy burden.

- Avoid conflicts with Section 13C of the Urban Mass Transportation Act of 1964 as amended.

These critical elements guided the review of institutional alternatives.

Description of Alternatives

Each of the three institutional plans has the capability of providing public transit services in the South Bay area. There are, however, important distinctions between the three institutional options. A simple description of the three alternatives is as follows:

a. Status quo. Under this option, all four area transit operators would continue to provide service. Route changes on a carrier by carrier basis would be possible but the general structure of the present transit network would continue.

b. Assumption of transit network by SCRTD. Under this option all local municipal services in South Bay would be dissolved. The entire transit network including both regional services and subregional services would be assumed and operated by the Southern California Rapid Transit District.

c. Creation of a sub-regional system. This option recognizes South Bay as a distinct sub-region within Los Angeles County. Transit linkages between the South Bay area and other sectors of Los Angeles County would appropriately be provided by SCRTD, the regional transit operator. Intra-area or local service would be provided by a single public transit entity for the South Bay region.

The alternatives are now evaluated in accord with the decision criteria previously discussed.

Discussion of Alternatives

Table 9 provides a subjective evaluation matrix of the three institutional alternatives for South Bay. A more extensive assessment of each alternative is as follows:

a. Status Quo.

This alternative has no significant ability to change the current transit system in the South Bay communities. Four somewhat splintered transit organizations would continue to provide varying service elements throughout South Bay. Passengers would continue to make an unnecessarily high volume of transferring movements in order to complete regional trip movements. Furthermore, this option has no ability to achieve any cost economies of transit operation. For these reasons, it appears inappropriate to continue the current transit institutional arrangements in the South Bay area.

b. Assumption of Service by SCRTD.

The Southern California Rapid Transit District is one of the nation's more efficiently organized and operated public transportation systems. Accordingly, the SCRTD has the capability to provide all services for the South Bay area. Under this option, however, the overall cost of South Bay's transit services could increase substantially due to the cost differential experienced by SCRTD operations. Therefore, it seems inappropriate to suggest that the SCRTD should assume all transit operations in South Bay. Specifically, services which can be operated more economically by a local provider should continue as such.

c. Creation of a Subregional Transit System

This alternative recognizes that the public transportation requirements of South Bay include both regional and sub-regional service needs. The local, intra-regional travel needs could be effectively met through the development of a full-fledged sub-regional carrier. However, the convenience and desirability of service to points beyond the South Bay area could be negatively affected if a sub-regional service is

TABLE 9

LOS ANGELES COUNTY TRANSPORTATION COMMISSION
SOUTH BAY INSTITUTIONAL ALTERNATIVES

DECISION CRITERIA	ALTERNATIVE A STATUS QUO	ALTERNATIVE B SCRTD OPERATION	ALTERNATIVE C SUBREGIONAL SYSTEM
1. Enhance overall mobility	No	Yes, but may limit intra-area service	No
2. Constrain overall cost	No change	No, SCRTD operating costs would increase overall burden	May provide some economics through elimination of duplication
3. Natural transit route terminals	No	Yes	No
4. Reducing transferring	No	Yes	No
5. Maintain municipal fare	Yes	No	Yes
6. Avoid 13(c) problems	Yes	May be some short term problems	May be some short term problems

developed at the expense of inter-regional service efficiency. Creating the necessity to transfer in order to reach destinations outside of South Bay could only inhibit transit patronage and could develop a situation similar to the status quo. While local needs would be effectively served, overall regional transit accessibility could suffer substantially through such an arrangement.

Institutional Alternatives - Conclusions and Recommendations

Three institutional arrangements for the provision of transit service in Los Angeles County's South Bay communities have been reviewed. A major institutional shift appears appropriate for public transportation in South Bay. In reality, none of the three original institutional alternatives appears to be the most appropriate. Instead, a combination of Alternative B and Alternative C would meet the needs of South Bay transit most effectively. The regional operator (SCRTD) must expand its regional system to its most effective natural limits in order to produce maximum transit accessibility and convenience for South Bay riders. At the same time, services that are purely local in nature or are presently operated in an economic manner, should be provided by a local entity in order to capitalize on operating economies. This arrangement recognizes South Bay as a subregion within Los Angeles County. The South Bay community experiences both internal and external transportation demand requirements. The external transportation requirements can best be served by Los Angeles County's regional transportation carrier, the Southern California Rapid Transit District, while internal public transportation requirements could effectively be served by a coordinated service, which, for the purposes of this report only, has been referred to as the South Bay Area Transit System. In this manner, it is expected that total personal mobility throughout South Bay could be substantially enhanced at a reasonable total public cost.

13(c) Implications

13(c) generally provides that employees laid off, deprived of employment or otherwise negatively affected as a result of a Federally funded project shall receive the protection of specific employee protective arrangements.

Inasmuch as it is anticipated that no employee of any transit system involved will be negatively affected by the proposed service and institutional changes recommended by this report, 13(c) most likely will have no implications.

The switching of some transit employees from one operation to another could potentially present some minor problems related to seniority, benefit levels, etc.; however, given existing labor arrangements, this impact should be minimal.

Overall, the service improvements recommended may well, in the long run, create many job opportunities for existing transit employees than currently exists thereby actually improving upon rather than negatively affecting their position.

In summary, given existing conditions and the types of service and institutional changes proposed, 13(c) does not appear to be a major obstacle to implementing these changes.

Maintenance Facilities

The purpose of this analysis is to select possible site locations and appropriate maintenance facilities for service options being considered for service in the South Bay Transit Region. Considerations for this analysis are based on two basic assumptions:

- As a result of the ATE study, a more effective and efficient route configuration can be provided to replace the existing SCRTD, City of Torrance, and City of Gardena services currently operating.

- Changes are needed to the existing operating and maintenance facilities in this area. Specifically,

  - SCRTD Division 12 in Long Beach is overcrowded and needs modernization.

  - SCRTD Division 18 at 190th Street is on temporarily leased land unsuitable for development into a permanent facility.

  - The Gardena shop is too small to accommodate buses and other city vehicles. A separate study by Wilbur Smith and Associates has recently addressed options available to correct this situation.

  - Torrance buses are serviced and repaired in a totally inadequate city vehicle repair shop. An UMTA grant to build a new bus facility near city hall has been in a deferred status for several years.

Optional Considerations

It is possible to approach the site selection requirements for three conditions:

- Option I - Consolidate all South Bay services into one large operation consisting of 275 to 300 buses to service all current and short term requirements from a revised route structure.

- Option II - Consolidate all routes not local in character into one large operation of from 200 to 225 buses in size. Local routes could be served by 30 to 35 buses in a consolidated facility in either Torrance or Gardena.

- Option III - Retain the status quo and operate from present facilities.

Facility Requirements

For the three options suggested for the site selection process, it is necessary to describe the facility requirements. It is not possible to project construction costs, without an indepth conceptual design program. However, similar existing facilities can be used as guidelines for approximate figures.

Option I - In a large consolidated facility such as this, all satellite service must be provided for to include:

- transportation operation assembly and dispatcher

- maintenance facilities for inspection, running repair, tire replace ment, unit charging, storeroom, supervisory and clerical offices, warehouses and locations,
- service facilities to include four lanes for fueling, cyclone cleaning and fare removal
- employee parking
- at least one work lane
- vehicle parking and maneuvering space.

Major maintenance, unit rebuilding, body repairs and paint for this location would be provided from the SCRTD central maintenance center.

As an example for preliminary design, the SCRTD Division #9 at El Monte can be used as a pattern for content and cost estimating.

Option II - Under the prevailing conditions for Option II, two sets of building requirements exist.

First, the operating division for the SCRTD portion of the structure, sufficient operating and maintenance facilities for up to 225 buses is required. Included in this facility are:

- transportation assembly and dispatching quarters
- maintenance facilities as described for Option I except for fewer work spaces and only three service lanes
- sufficient vehicle parking and maneuvering space
- employee parking

A newly constructed facility such as SCRTD Division #7 can be used as a planning guide for needs and costs. However, if this facility is used as a conceptual design model, care must be taken to adjust for those features later felt to be less than desirable. Some of these features resulted from the topographical configuration of the site.

As in Option I, heavy maintenance, unit rebuilding, body repairs and painting would be done at the SCRTD central shops.

The second facility requirement for the local operation is somewhat different. A total operating facility to accommodate up to 40 vehicles must include the following:

- administrative offices
- accounting and fiscal
- legal and claims
- public admittance
- transportation assembly and dispatching
- maintenance to include:
  - inspections
  - running repairs
  - unit rebuilding (as much as practical to be contracted)
  - body work (major body and paint to be contracted)
  - line inspection and repair
  - stores

- supervisory and clerical space
- single service lane to include fueling, washing, cleaning, and fare extraction.

. vehicle parking and maneuver space
. employee parking

Option III - To this option which is the status quo alternative, no requirements are needed. Additionally, it is extremely doubtful whether this can be considered a viable alternative because of the current conditions mentioned at the beginning of this section on site selection would require new facilities to be built in the near future for all three present major transit operators in South Bay making this option not very cost effective.

Site Requirements

Responding to the three options being considered, the following criteria are established for site requirements:

. Site must be accessible to local street network and not restricted to single ingress or egress

. Site must be located near route and freeway access.

. Site must be suitable for bus parking, contruction of a maintenance, service, and operations building

. Site must be located in an area permitting garage and terminal functions.

. Site and soil preparation must be practical and cost effective.

The size of the site requirements for the three options is as follows:

. Option I - 12 to 15 acres
. Option II - 10 to 12 acres
. Option III - None required.

Justification for these size guidelines is based on substantial national experience.

Land sizes for various transit operations used as examples for bus operating facilities ranging from 175 to 325 buses is shown in Table 10.

In addition to compliance with the requirements listed above, practical site location parameters must take into consideration such factors as:

. Extremely high cost of available industrial land.

. Limited availability of suitable sites in the South Bay area.

. Relatively high proportion of vacant land located in uncontrolled land fill areas.

TABLE 10

TYPICAL TRANSIT OPERATIONS FACILITIES

Location	Acres	Buses	Storage	Service	Maint.	Heavy Shop	Remarks
RTD Div. 1	5.2	245	X	X	X	---	Tight
RTD Div. 2	7.6	252	X	X	X	---	Tight
RTD Div. 3	8.7	227	X	X	X	---	
RTD Div. 5	9.3	284	X	X	X	---	
RTD Div. 7	9.3	202	X	X	X	---	
RTD Div. 8	5.7	201	X	X	X	---	Overcrowded
RTD Div. 9	13.0	332	X	X	X	---	
OCTD							
Garden Grove	14.3	256	X	X	X	X	Triangle shaped site, individual bus park.
Minneapolis							
South Garage	8.9	200	X	X	X	---	Inside Storage
Snelling Garage	8.9	257	X	X	X	X	Inside Storage
Nicollet Garage	5.3	272	X	X	X	---	Crowded
Shingle Creek Garage	12.5	200	X	X	X	---	
Richmond, Va.	3.0	212	X	X	X	X	
Indianapolis	11.5	210	X	X	X	X	
Memphis	17.5	350	X	X	X	X	To be constructed
Cincinnati							
Walnut Hills Div.	4.3	175	X	X	X	---	Very tight
Brighton Div.	4.5	171	X	X	X	---	Very tight
Chicago							
77th St. Garage	18.5	335	X	X	X	X	
69th St. Garage	6.2	232	X	X	X	---	
Archer Garage	6.2	286	X	X	X	---	
Kedzie Garage	8.12	266	X	X	X	---	Needs empl. parking
North Ave. Garage	15.4	265	X	X	X	---	
North Park Garage	11.4	350	X	X	X	---	Triangle space
Forest Glen Garage	10.4	261	X	X	X	---	Street runs thru site
95th St. Garage	10.0	250	X	X	X	---	

TYPICAL TRANSIT OPERATIONS FACILITIES (CONTINUED)

Location	Acres	Buses	Storage	Service	Maint.	Heavy Shop	Remarks
Baltimore							
Bush Div.	21.0	335	X	X	X	X	Includes all bldgs., maintenance and stores
Kirk Div.	7.0	225	X	X	X	---	
Eastern Div.	5.2	184	X	X	X	---	
Milwaukee							
Fond-u-Lac Garage	12.4	260	X	X	X	---	
Kinnickinnic Garage	5.7	200	X	X	X	---	

- Reluctance of communities to allow bus garages within corporate limits to occupy land that might be sold to taxable users.

Because these and other factors limit the number of site selections available, it would be advantageous to seek properties of the smallest size practicable. Proper design considerations are condusive to efficient and cost effective use of land. There are opinions that operating advantages accrue by individually assigned spaces for bus parking. While there are some advantages to this system, there are numerous disadvantages that result from the requirement for three times as much yard space as needed for in-line parking. These disadvantages are:

- Much higher land acquisition costs.
- Greater distances for bus operators to walk that could result in union demands for additional non-platform pay time.
- Greater distance for the daily hostling of vehicles through the service lane.
- Additional paving to install and maintain.

Site Selection:

As local specialists in industrial real estate in the Los Angeles area, the firm of Coldwell-Banker was selected as a subcontractor to assist in the site search. With the parameters previously stated, the following is a summary of the available locations as identified by Coldwell-Banker.

Site #1 - At the NE corner of Prairie Ave. and Del Amo Blvd., a 31.5 acre site zoned M-2 is available at about $3.50 per square foot. This site would require substantial amount of fill at the site section. However, because of its size, it might be possible to use 12 to 15 acres away from the major fill area.

Site #2 - An 86 acre site between Western Ave., Torrance Blvd., and Del Amo Blvd. is available. This site is zoned M-2 and is proposed for an industrial development. Cost is between $5 and $6 per square foot in a ready to use condition.

Site #3 - The City of Torrance owns 29.5 acres north of Lomita Blvd. and east of Hawthorne Blvd. Availability depends on demand by industrial developers and willingness of the city to allow a bus facility at this site.

Site #4 - Another site in the city of Torrance on the NE corner of Skypark Drive and Hawthorne Blvd. is available with M-2 zoning for 22 acres. This site is outside of primary and secondary boundaries of both options.

Site #5 - This is a 23.5 acre site zoned M-2 located between Western Ave., Sepulveda Blvd., and 228th St. A request by the developer is pending to rezone this area to R-1 and is currently in escrow at $3.00 per square foot.

Site #6 - This 28 acre site located on the NW corner of Sepulveda Blvd. and Normandie Ave. is zoned M-2 and planned to be an industrial park of small buildings for lease or sale. The current price is $4 to $5 per square foot.

Site #7 - These 14 acres located north of Torrance Blvd. with frontage on Figueroa and Main Streets is on about 35 feet of organic fill. Its low price of about $1.55 per square foot indicates that site preparation is needed before usage.

Site #8 - On the east side of Main Street just north of the San Diego Freeway are 28 plus acres zoned M-2. Because of the organic land fill problems that require site preparation costs, the land is available at about $1.50 per square foot.

Site #9 - Although only 10 acres in size, its location is excellent on the SE corner of Knox St. and Vermont Ave. This site is zoned M-3 and the current price is $3.50 per square foot.

Site #10 - This site is a 100 acre parcel adjacent and part of the Madrona swamp. Environmentalist attempts to save the swamp has stopped all building temporarily on this site at the NW corner of Sepulveda Blvd. and Crenshaw Ave. If available the approximate value of the M-2 zoned land is $2.50 per square foot.

Site #11 - On the north side of Del Amo Blvd. between Vermont Ave. and Normandie Ave. is 14 acres of M-3 zoned land. Adjacent to this parcel is a 6 acre easement under power transmission lines that might be available for parking. The value of this site has recently climbed to $5 per square foot.

Site #12 - There is substantial excess land along Avalon Blvd. on the SW corner of Victoria St. owned by the Cal State Univ. at Dominguez Hills. It is doubtful whether this will be sold, but a possible lease arrangement might be arranged in light of declining student populations.

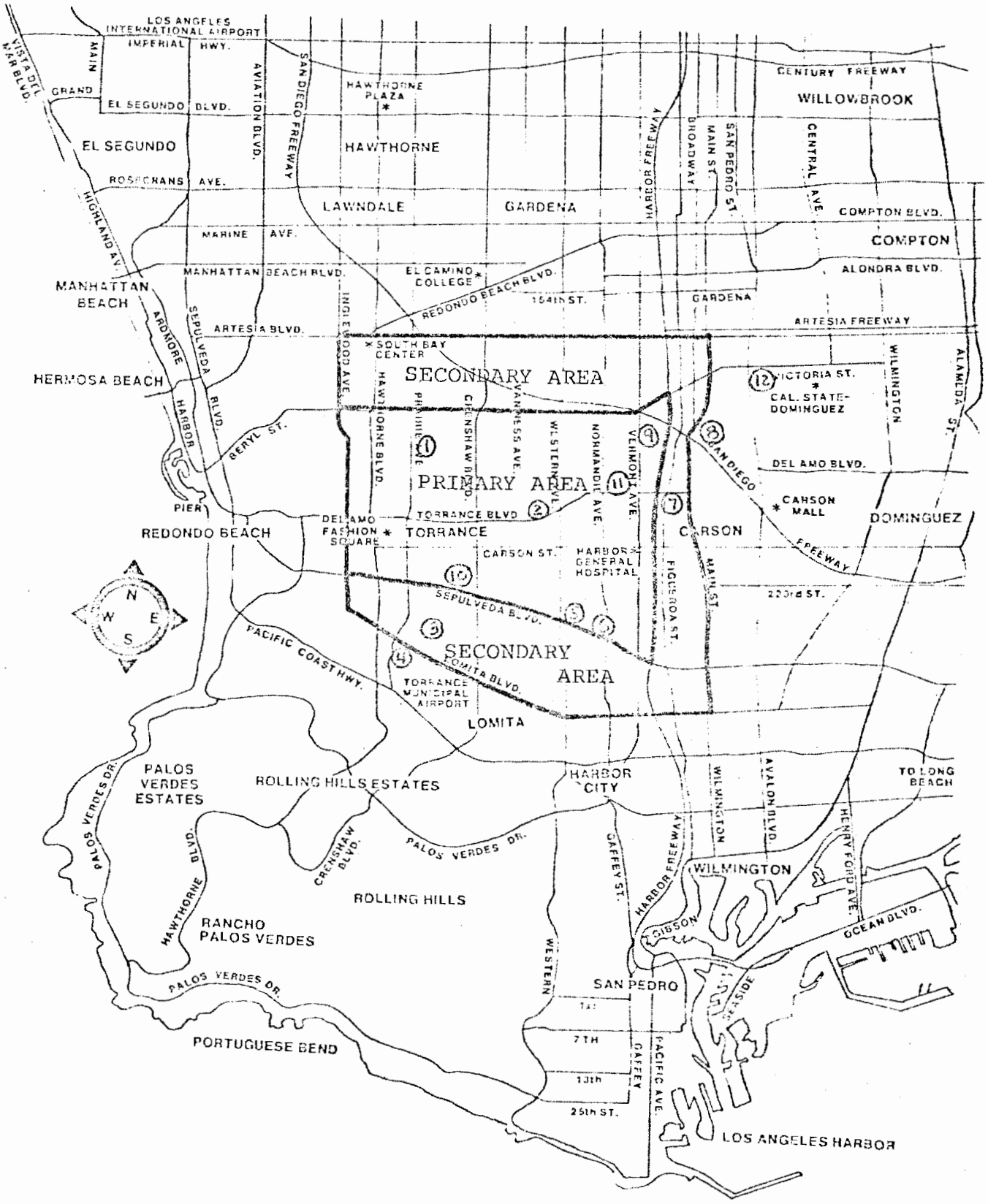
Details of all twelve of these sites plus evaluations and recommendations are contained in the report by Coldwell Banker Management Corporation. This report is attached as Appendix A.

In summarizing the site locations from the Coldwell Banker report, attention will be given to the two options. For each option, a primary and secondary site location boundary was established according to the maps included as Figure 32 and Figure 33. Locations on streets used as boundaries will be considered within the zone regardless which side of the street the site is located.

		Option I		Option II	
Site No.	Acres	Primary	Secondary	Primary	Secondary
1	32	X			
2	86	X		X	
3	30		X		
4	22				
5	24	X		X	
6	28	X		X	
7	14		X	X	
8	28		X		X
9	10	X		X	
10	100	X		X	
11	14	X		X	
12	N/A				X

FIGURE 32

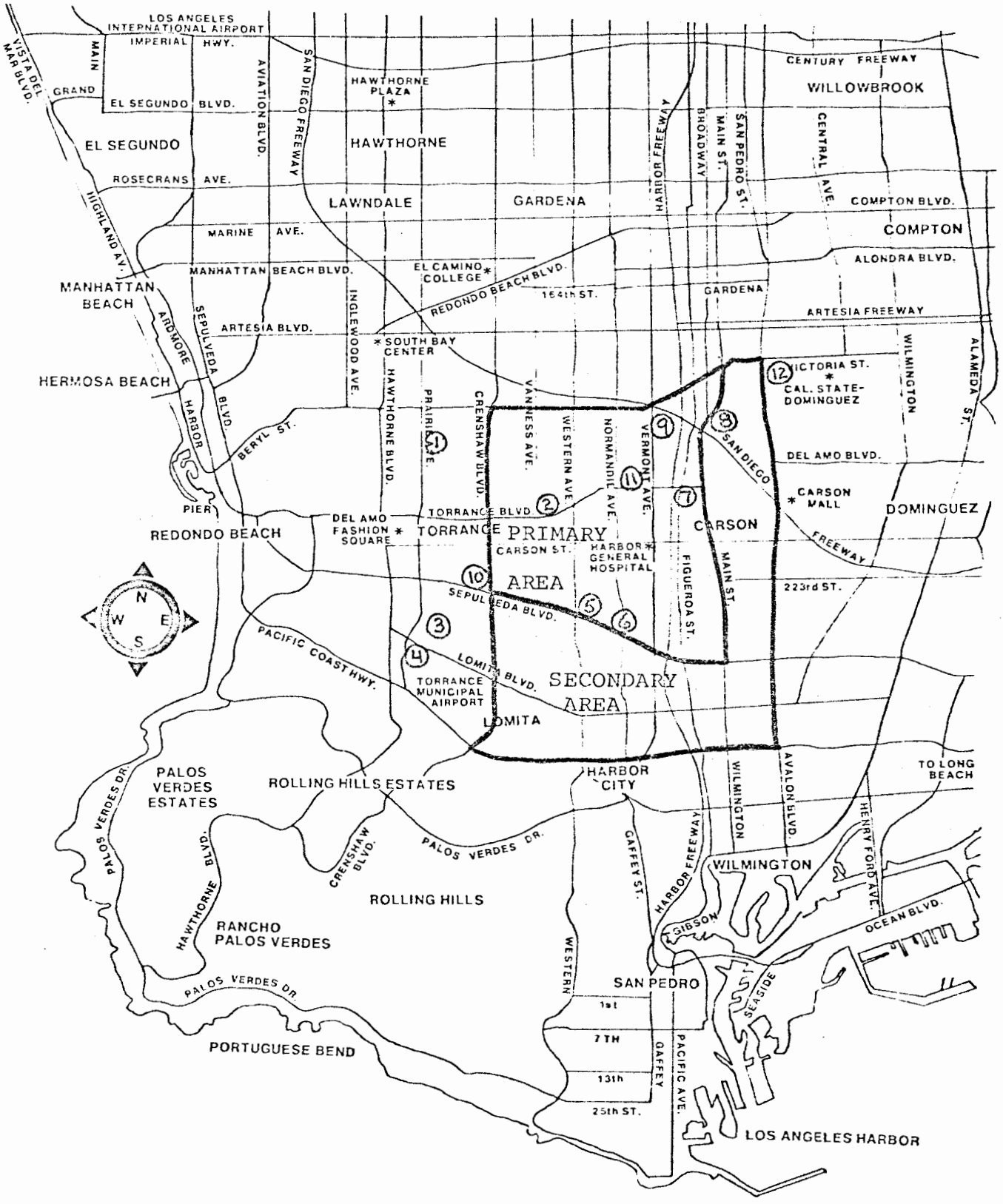
OPTION I SITE SELECTION CRITERIA - ALL SOUTH BAY SERVICE IN ONE FACILITY



(2) POSSIBLE SITE LOCATIONS

FIGURE 33

OPTION II SITE SELECTION CRITERIA - FOR S.C.R.T.D. SERVICE ONLY - PRESUMES OPERATION OF A TORRANCE FACILITY FOR SELECTED LOCAL ROUTES



(2) POSSIBLE SITE LOCATIONS

Analysis of Site Recommendations:

It is interesting to note that many of the available sites exceeded the minimum 10 acre parameter by substantial margins. This can be explained by the fact that many of these parcels have been planned or programmed for industrial site development that has not yet materialized.

Only one of the twelve sites is outside of the primary and secondary zones of both options. Because of this, it probably can be dropped except as a fall back position.

Each of the options have seven sites in their primary zones and six of the sites are in the primary zones of both options.

Three of the sites need substantial site preparation engineering and construction to become effective considerations. In the interest of maximizing tax utilization, these sites should be thoroughly studied for soil preparation for cost effectiveness. Additionally, use of these sites reduces the probability of local objection to land use by a public body not contributing to the local tax fare.

Deadhead Analysis:

In order to evaluate the relative efficiency of operating South Bay service from more than one maintenance facility as compared to operating all service from a single South Bay site, a deadhead analysis was undertaken. For each proposed SBATS service route the number of weekly deadhead miles required in order to operate that service was calculated for each of four locations. The locations evaluated included the three most practical and available sites for a new SCRTD facility, as identified by the Coldwell Bank study, plus the most likely location for a SBATS facility (northwest of the Torrance Civic Complex) should that service operate separately from the SCRTD regional service.

As can be seen in Table 11, operating the proposed SBATS service from the Torrance Civic area site, which could occur if SBATS service operates separately from SCRTD service, would require at least 217 fewer deadhead miles per week than from any other possible SCRTD facility site. This translates to a possible savings of approximately 11,284 deadhead miles per year by operating the SBATS routes from the Torrance Civic area site. This represents a potential savings in operating costs of about $20,000 per year. Consequently, segregating the proposed SBATS routes in this manner appears to be warranted because of such potential operational economies.

Recommendations:

In the course of the selection of appropriate sites for operation and maintenance facilities, several key observations were significant to this project. These were:

- Appropriate sites are difficult to find.
- Cost for suitable sites is extremely expensive.
- Land sale transactions are continuing to reduce available sites.
- Smaller communities are reluctant to use land for public use instead of private non-taxable users.
- Some land in the region is available because of unsatisfactory soil conditions.

TABLE 11

DEADHEAD MILES FROM PROPOSED
GARAGE SITES TO S.B.A.T.S. ROUTES

Site: Torrance Civic Area Route	Pull-Ins and Pull-Outs Per Weekday	 Sat./Sun.	Miles From Garage to Route	Miles X PI/PO Weekdays	 Weekend	Total Weekly Miles
1. L.A. - via Vermont	8	8	1/2	20	4	24
2. L.A. - via Crenshaw	4	4	1/2	10	2	12
3. L.A. - via Gardena	22	12	6	660	72	732
4. Riviera - El Camino	4	4	1/2	10	2	12
5. Redondo - Lomita	2	2	1/2	5	1	6
6. Redondo - El Camino	2	2	1 1/2	15	3	18
7. Western - Vermont	4	8	4 1/2	90	36	126
Total						930 miles
Site: Garage Site #2						
1. L.A. - via Vermont	8	8	1	40	8	48
2. L.A. - via Crenshaw	4	4	3	60	12	72
3. L.A. - via Gardena	22	12	7 1/2	825	90	915
4. Riviera - El Camino	4	4	3	60	12	72
5. Redondo - Lomita	2	2	1/2	5	1	6
6. Redondo - El Camino	2	2	1/2	5	1	6
7. Western - Vermont	4	8	1	20	8	28
Total						1147 miles
Site: Garage Site #9						
1. L.A. - via Vermont	8	8	1 1/2	60	12	72
2. L.A. - via Crenshaw	4	4	3 1/2	70	14	84
3. L.A. - via Gardena	22	12	8 1/2	935	102	1037
4. Riviera - El Camino	4	4	4	80	16	96
5. Redondo - Lomita	2	2	2	20	4	24
6. Redondo - El Camino	2	2	1 1/2	15	3	18
7. Western - Vermont	4	8	1	20	8	28
Total						1359 miles

Site: Garage Site #11	Pull-Ins and Pull-Outs Per Weekday	Pull-Outs Sat./Sun.	Miles From Garage to Route	Miles X PI/PO Weekdays	Weekend	Total Weekly Miles
1. L.A. - via Vermont	8	8	1	40	8	48
2. L.A. - via Crenshaw	4	4	4	80	16	96
3. L.A. - via Gardena	22	12	8	880	96	976
4. Riviera - El Camino	4	4	4 1/2	90	18	108
5. Redondo - Lomita	2	2	1 1/2	15	3	18
6. Redondo - El Camino	2	2	1	10	2	12
7. Western - Vermont	4	8	1	20	8	28
Total						1286 miles

For these and other related factors it is imperative that prompt action be taken to acquire options on the most desireable parcels of available land for the option selected.

Delays in addressing this issue would result in further escalation of land costs and simultaneous elimination of possible good sites.

As a result of the previously described route improvement recommendations, and the deadhead analysis, it also is recommended that a smaller, local service facility be constructed on the proposed site near the Torrance Civic Center. That facility should accommodate about 30 regular transit vehicles plus possibly 10 to 15 small, demand responsive type vehicles. That site should service vehicles operated on the seven local "South Bay Area Transit System" routes (former Torrance routes #1 and #2, Gardena Route #1 and #2 plus three newly designed local routes), service for the Gardena school trippers (if necessary), and should be the headquarters for the consolidated South Bay demand responsive service for the elderly and handicapped.

The remainder of the service operated in South Bay should be maintained at a new 200 to 225 bus SCRTD facility. The most available and beneficial locations for this new facility appear to be sites #2, #9 and #11 described above and included in greater detail in Appendix A. Any of these three locations would be of sufficient size, appropriately located, for dead heading considerations, and may be available at an affordable price.

This new SCRTD facility should house all vehicles now maintained at SCRTD Division #18, plus the additional vehicles required for the proposed expanded SCRTD service in South Bay. Some vehicles now maintained in Long Beach at SCRTD Division #12 should be transferred to this new facility to alleviate overcrowding problems now experienced at the Long Beach site.

The proposed reallocation of service combined with the construction of a new regional garage by SCRTD and a local facility in Torrance, eliminates the need for the continued operation of the current transit facility in Gardena. Additionally, the Hermosa Beach vehicle should be utilized by the regional demand responsive service and should operate from the new "South Bay Area Transit System" garage in Torrance.

Fare Policy Coordination in South Bay

While the individual fare structures of current transit operators in South Bay reflect current local prerogatives and cost structures, the various differentials provide a confusing fare tariff for the general public. Consolidation and coordination of service in the South Bay area requires that the fare policy differential issue be addressed. As long as multiple prices are available on the marketplace, some problems will inevitably occur. Consequently, it is a basic recommendation that the Los Angeles County Transportation Commission strive toward mandating a uniform base fare policy for all of the South Bay area. It is also recommended that a single uniform fare for express service operated by both SCRTD and SBATS between South Bay and downtown Los Angeles be initiated. In view of the type of service provided, conformance with the current SCRTD fare by the three SBATS routes to L.A. would be most appropriate.

In the short run, it may be appropriate to initiate a phased coordination of the various fare policies. In this regard, Table 12 illustrates a proposed fare structure for the South Bay communities. Note that this structure describes a schedule of fares for the Southern California Rapid Transit District and a schedule of fares for the new South Bay Area Transit System. The basic price differential between SCRTD and SBATS is 10¢. It is proposed that this price differential be offset by the elimination of the inter-system transfer charge. In accord with this fare structure all regional service links as operated by SCRTD would be governed by the basic 45¢ tariff. Intra-area services as operated by SBATS would be governed by the 35¢ tariff. In this manner, the fare structure would not only reflect a differential for individual system cost structures, but also would effectively recognize the type and length of trip involved. Furthermore, the two-system tariff would avoid cumbersome individual route collection procedures which would be necessary if the municipal fare concept is to be entirely maintained.

Coordination of fare policies is an important issue in the implementation of service improvements in the South Bay communities. The present array of fare policies illustrates the splintering of transit responsibilities in the area. The establishment of the proposed two-part regional and intra-area tariff would simplify and improve fare collection procedures throughout South Bay. Furthermore, it would greatly assist the development of a truly coordinated fare structure for all of Los Angeles County.

Other Factors and Recommendations

During the course of this project, the ATE study team was exposed to many of the personal attitudes of transit riders, political leaders and other citizens of South Bay toward various aspects of the present transit service. The following observations were made:

- SCRTD is perceived as being uncaring and a threat to local control in South Bay.
- SCRTD has developed a negative image in South Bay.
- It was related to the ATE team that SCRTD is viewed as a "Big Brother" of transit while the municipal operators have assumed the image of a good neighbor which local citizens have found easy to identify with.

SCRTD has a poor image in the South Bay area while the municipal carriers are perceived as good operators. However, when it comes to actual service evaluation, these designations do not seem to be justified.

Despite the necessity of often utilizing antiquated equipment, the reliability, professionalism and on-time performance of the SCRTD service is good. Those persons in South Bay who had the fewest complaints about the SCRTD were those who were currently using the SCRTD service.

It is likely that much of the current SCRTD image problem relates to their perceived and actual remoteness from the South Bay area. South Bay residents have difficulty relating to an operating entity stationed twenty-five or thirty miles away and feel that such a body cannot fully understand their transportation problems and needs. In order to help correct this situation it is suggested that

TABLE 12
LOS ANGELES COUNTY TRANSPORTATION COMMISSION
PROPOSED SOUTH BAY FARE STRUCTURE

	SCRTD	SBATS
BASE	$.45	$.35
EXPRESS	---	---
ZONES	---	(25)?
YOUTH	$14/mo.	.15
SENIOR	.15	.15
HANDICAPPED	.15	.15
TRANSFERS		
INTRA-SYSTEM	.10	Free
INTER-SYSTEM	Free	Free
MONTHLY PASS	$18	---
BLIND	Free	Free

SCRTD marketing and public relations efforts for South Bay be directed from the new SCRTD South Bay operating facility, when constructed, or from the SBATS facility.

An overall proportionate share of the existing SCRTD marketing budget should be directed to this effort. No additional marketing funds should be expended.

Monitoring and Control of Service Improvements

In order to guarantee that the service improvements recommended by this study are implemented and operated in the most effective manner possible and that the service is maintained at the level deemed appropriate for demand, it is recommended that a special advisory committee be established. This committee should be comprised of elected officials from the South Bay area, who, working through their representatives on the SCRTD Board and for the new SBATS service, oversee the effectiveness of the expanded SCRTD role in South Bay as well as the newly designated SBATS system.

A special task of this committee would be to monitor the net effect of these service changes after the initial 12 or 18 month implementation phase. After such a period, modifications to the service should be made if needed and as appropriate.

Impact of Recommendations on Ridership

Contained in this section are projections of potential increases or reductions in transit ridership resulting from the previously described modifications to route service. The information contained in this section should only be used for overall guidance when attempting to assess the overall benefits that could be derived from those service improvement recommendations.

One common method used to project transit patronage involves relating the modified route system to ridership experienced on previous transit service serving similar areas and providing generally the same type and magnitude of service. With this in mind, the schematics of all municipal routes, which detail current ridership, found in Appendix B, were utilized to help develop some overall ridership projections for the recommended modified transit network.

Some basic assumptions applied in the development of these ridership projections were:

- Riders now patronizing certain segments of each local route will generally continue to patronize transit service in approximately the same numbers should that segment of the transit route now available to them be switched to another route for service.

- A more complete transit network with greater transit coverage which requires less transferring to get between major activity centers and major residential neighborhoods should attract appreciably more riders than the transit service which does not exhibit such beneficial features.

- Routes that are extended to provide access to another previously unserved major generator should expect to experience substantial ridership increases relating to the improved accessibility to that major activity center.

- Modest increases in fares are generally not going to have a significantly negative impact on total transit patronage on a route if that route exhibits greater convenience, better reliability and provides accessibility to a wider overall area and several new major activity centers.

With these factors in mind, Table 14 displays the approximate impact on total transit ridership that can be expected from the transit service improvements recommended in this report. Table 13 shows the affect on the municipally operated routes by comparing projected annual ridership for the new South Bay Area Transit Service routes with the current annual ridership now patronizing the transit services operated by the cities of Torrance, Gardena and Hermosa Beach.

It can be seen that the new SBATS routes can be expected to carry approximately 2,510,000 passengers per year. This compares to the current 3,359,000 rides now carried by the three combined municipal systems in South Bay.

While this would be a reduction of almost 850,000 rides carried by local transit services in South Bay, the number of vehicles and total operating expenses required to provide such service (see following section) will actually not be very much greater than that which is currently experienced by the Torrance Transit System alone. Additionally, SCRTD ridership will be substantially increased.

Table 14 displays the projected ridership increases and decreases that can be expected from modifications to existing SCRTD routes in South Bay. Overall, SCRTD service can expect to attract approximately 1,509,000 transit rides more than its service is currently carrying in South Bay. This substantial ridership increase more than offsets the reduction in patronage to be carried by the local operation to the point that, system wide, South Bay can expect to realize a net increase in transit ridership of approximately 660,000 passengers.

This increase in overall transit ridership, coupled with a modification in fare structure for some transit riders (see section on fare structure) could net an overall increase in annual farebox revenue for all of South Bay of approximately $314,300. Such an increase, however, would be strongly dependent upon the type of fare structure adapted for the new South Bay operational structure. Revenue, consequently, could vary greatly.

Impact on Operating Costs

Providing transit service in the manner described by the improvement recommendations outlined in Chapter IV presents a number of opportunities for the operation of the transit system.

Despite the projection of a net increase in annual ridership in the South Bay area of about 660,000 riders, the actual cost of providing this service should remain about at their current levels.

The operating requirements of this service are outlined in Tables 15 and 16. It should be noted that while the SCRTD regional service will require an additional 17 peak hour vehicles and 65,000 hours of additional operating service annually, the total "local" service requirement operated by SBATS will be 19 to 26 peak hour vehicles (with and without school trippers) and 86,130 hours of operation annually. The SBATS service will be approximately equal in size to that which is currently operated by the Torrance system alone.

TABLE 13

PROJECTED RIDERSHIP CHANGES

	Current Annual Ridership (Municipal Operators)	Projected Annual Ridership (SBATS Service)	Percent Change
TORRANCE ROUTES			
Route #1 - Los Angeles	538,000	457,000	- 15.1%
Route #2 - Los Angeles	348,000	307,000	- 11.8%
Route #3 - Torrance - Long Beach	487,000	-0-	-100.0%
Route #4 - Riviera - El Camino	122,000	-0-	-100.0%
Route #5 - Redondo, Lomita, El Camino	250,000	-0-	-100.0%
Shopper's Special	40,000	-0-	-100.0%
HERMOSA BEACH ROUTE			
Local Double Loop	16,000	-0-	-100.0%
GARDENA ROUTES			
Route #1 - Los Angeles	535,000	596,000	+ 11.4%
Route #2 - Western - Vermont Loop	486,000	236,000	- 51.4%
Route #3 - Gardena - Compton	312,000	-0-	-100.0%
Route #5 - Redondo - Rosecrans	60,000	-0-	-100.0%
Extra School Oriented Service	165,000	165,000	0%
NEW SBATS LOCAL ROUTES			
Local #4 - Riviera - El Camino - Gardena	-0-	295,000	+100.0%
Local #5 - Redondo Pier - Lomita	-0-	244,000	+100.0%
Local #6 - El Camino - Redondo Pier	-0-	210,000	+100.0%
Total Local Operations	3,359,000	2,510,000	- 25.3%

TABLE 14

PROJECTED RIDERSHIP CHANGES

SCRTD Ridership Increases (Decreases)

ROUTE	TYPE OF CHANGE	ANNUAL RIDERSHIP INCREASE (DECREASE)	PERCENT CHANGE
#5 Hawthorne Blvd.	Extension to L.B.	508,000	+ 8.1%
#6 Vermont	Extension to Carson	68,000	+ 1.0%
#84 Western	Extension to P.C.H.	255,000	+ 3.7%
#85 Crenshaw	Extension to P.C.H.	141,000	+ 1.7%
#96 Normandie	Extension to Harbor Gen.	157,000	+ 4.7%
#114 Lynwood - Carson	Cutback from Carson	(74,000)	+ 37.1%
#114 Lynwood - Carson	Extension to El Camino	183,000	
#607 L.A. - Del Amo F.S.	Extension to Lomita	98,000	+ 6.3%
#849 San Pedro - Harbor Gen.	Carson - Compton Ext.	173,000	+ 16.1%
TOTAL NET INCREASE IN SCRTD RIDERSHIP (IN SOUTH BAY)		1,509,000	+ 9.3%
TOTAL NET INCREASE IN SOUTH BAY TRANSIT RIDERSHIP		660,000	+ 3.4%

APPROXIMATE NET INCREASE IN ANNUAL FAREBOX REVENUE FOR ALL SOUTH BAY SERVICE =

$178,200 - Ridership Increases
$136,100 - Fare Changes

$314,300 - Total

TABLE 15

SCRTD ROUTES
ADDITIONAL VEHICLES AND PLATFORM HOURS

Route	Vehicles			Platform Hours			
	a.m.	Midday	p.m.	Wkd.	Sat.	Sun.	7-Day
5 Hawthorne Blvd.	3	3	3	44	32	24	276
6 Vermont	3	3	3	36	36	25	241
84 Western	4	4	4	50	50	--	300
85 Crenshaw	2	2	2	16	15	--	95
96 Normandie	1	1	1	13	13	13	91
114 Lynwood - El Camino College	1	1	1	12	13	--	73
607 L.A. - Redondo - Torrance	1	1	1	12	--	--	60
849 San Pedro	2	2	2	24	24	--	144
Totals	17	17	17	207	183	62	1280

TABLE 16

MUNICIPALLY OPERATED ROUTES
DECREASE IN VEHICLES AND PLATFORM HOURS

Route	Vehicles			Platform Hours			
	a.m.	Midday	p.m.	Wkd.	Sat.	Sun.	7-Day
1. Los Angeles becomes SBATS Route 1	(1)	(1)	(1)	(15)	(17)		(92)
2. Los Angeles becomes SBATS Route 2	(1)	(1)	(1)	(15)	(15)	(8)	(98)
3. Long Beach	(5)	(3)	(5)	(63)	(44)	(23)	(382)
4. Riviera - El Camino becomes SBATS Route 4	--	--	--	1	4	--	9
5. Lomita-Redondo becomes SBATS Routes 5 & 6	--	--	--	--	--	--	--
1. Los Angeles becomes SBATS Route 3	--	--	--	--	--	--	--
2. Western-Vermont becomes SBATS Route 9	(2)	(2)	(2)	(25)	(25)	(25)	(175)
3. Compton	(3)	(3)	(3)	(39)	(24)	(9)	(228)
5. Redondo - Rosecrans	(2)	(2)	(2)	(72)	(16)	(16)	(142)
Hermosa*	(1)	(1)	(1)	(7)	(7)	(7)	(42)
Shoppers Special	--	(2)	(2)	(16)	(16)	(8)	(104)
School	--	--	--	--	--	--	--
Totals	(15)	(15)	(17)	(201)	(160)	(96)	(1254)

*Operates Tues. through Sun.

The effect is to provide all locally based service in South Bay with the resources and capabilities currently possessed by a service the size of the Torrance system alone. A discontinuation of the transit service operated by Gardena and Hermosa would reduce operating costs by approximately $1,460,000 annually. Meanwhile, the additional service to be provided by SCRTD (about 65,000 hours annually) should cost the regional operator about $1,388,000 to operate. This alone could reduce operating costs by about $72,000.

When coupled with the projected increase in farebox revenue of about $314,300 generated by the additional ridership and modified fare structure, the total transit operating deficit in South Bay could actually be reduced by as much as $386,300 annually. This savings could be realized even though the quantity and quality of service provided for the area will be vastly improved and as many as 660,000 more transit riders should patronize the more attractive service.

Both remaining operating bodies should benefit from these improvements. SBATS will be transporting 30% more riders than any municipal operator presently carries in South Bay while operating about the same number of vehicles as Torrance alone now operates. This should greatly increase productivity, reduce the overall operating subsidy per passenger and generate a higher percentage of expenses returned through the farebox than any of the municipal operators currently experience independently. In fact, the percentage of operating costs returned through the farebox for SBATS should be in the vicinity of 45% to 50%.

SCRTD meanwhile will be operating a more complete county-wide network which should generate an additional 1,500,000 riders the first year. That total could continue to increase substantially in subsequent years because of the positive effect that the increased accessibility in South Bay could have on the rest of the SCRTD system.

Relating to the selection of the best institutional alternative, it is important to note that, should SCRTD operate all South Bay service, as was mentioned as a possible alternative in Chapter IV, operating costs could be approximately $304,500 more per year than that which could be expected with the operation of a small sub-regional carrier as has been recommended. Tables 17 and 18 outline the service requirements of such an arrangement. Consequently, the obvious financial benefits associated with the retention of a local operator for some service in South Bay seems to preclude the "all service by SCRTD" as a viable institutional alternative.

It appears appropriate to also mention that substantial savings in fuel could also be realized for Los Angeles County by implementing these service improvements. While increasing bus miles only minimally, the increased transit patronage from this plan could reduce automobile mileage in the South Bay area by about 4,620,000 miles annually which could save about 350,000 gallons of gasoline each year.

Finally, it should be noted that no costs can be projected at this time for the operation of a unified demand-responsive service for elderly and handicapped transportation in South Bay. Too many variables and unanswered questions concerning current costs, area coverage, future subsidies, vehicle availability, service priorities and type of management preclude the projection of those costs in this report. It seems likely, however, that such a unified operation could realize substantial operating economies while greatly expanding service availability and the quality of the service provided.

TABLE 17

MUNICIPALLY OPERATED ROUTES
DECREASE IN VEHICLES AND PLATFORM HOURS
ALL SERVICE PROVIDED BY S.C.R.T.D.

Route	Vehicles a.m.	Vehicles Midday	Vehicles p.m.	Platform Hours Wkd.	Platform Hours Sat.	Platform Hours Sun.	Platform Hours 7-Day
1. Los Angeles	(3)	(3)	(4)	(53.8)	(49)	(23.2)	(341.2)
2. Los Angeles	(3)	(3)	(3)	(49)	(3)	(45.3)	(293.3)
3. Long Beach	(5)	(3)	(5)	(63)	(44)	(23)	(382)
4. Riviera-El Camino	(2)	(2)	(2)	(23)	(20.8)	--	(135.8)
5. Lomita-Torrance-Redondo	(2)	(2)	(2)	(32)	(30.5)	--	(190.5)
1. Los Angeles	(7)	(4)	(8)	(87)	(52.8)	(52.8)	(540.6)
2. Western-Vermont	(4)	(4)	(4)	(50.3)	(50.3)	(50.3)	(352.1)
3. Compton	(3)	(3)	(3)	(39)	(24)	(9)	(228)
5. Redondo-Rosecrans	(2)	(2)	(2)	(22)	(16)	(16)	(142)
Hermosa*	(1)	(1)	(1)	(7)	(7)	(7)	(42)
Shoppers Special		(2)	(2)	(16)	(16)	(8)	(104)
School	(9)	(9)	--	(37)	--	--	(185)**
Totals	(41)	(38)	(36)	(481.1)	(313.4)	(234.6)	(2936.5)

*Operates Tues. through Sun.
**Operates on School Days only

TABLE 18

SCRTD ROUTES
ADDITIONAL VEHICLES AND PLATFORM HOURS
ALL SOUTH BAY SERVICE OPERATED BY S.C.R.T.D.

Route	Vehicles a.m.	Vehicles Midday	Vehicles p.m.	Platform Hours Wkd.	Platform Hours Sat.	Platform Hours Sun.	Platform Hours 7-Day
5 Hawthorne Blvd.	3	3	3	44	32	24	276
6 Vermont	3	3	3	36	36	25	241
84 Western	4	4	4	50	50	--	300
85 Crenshaw	1	1	1	16	15	--	95
96 Normandie	1	1	1	13	13	13	91
114 Lynwood-Normandie	1	1	1	12	13	--	73
607 L.A.-Redondo-Torrance	1	1	1	12	--	--	60
849 San Pedro	2	2	2	24	24	--	144
1 Los Angeles (Tor)	2	2	3	34	32	23	225
2 Los Angeles (Tor)	2	2	2	34	30	--	200
4 Riviera-El Camino	2	2	2	24	24.8	--	144.5
5&6 Lomita-Redondo-El Camino-Redondo	2	2	2	32	30.5	--	190.5
1 Los Angeles (Gar)	7	4	8	87	52.8	52.8	540.6
2 Western-Vermont	2	2	2	25.3	25.3	25.3	177.1
School	9	9		39			*195
Totals	43	40	36	480.3	378.4	163.1	2952.7

*Operates on School Days only

TABLE 19

NEW SBATS ROUTES
FREQUENCY AND VEHICLE REQUIREMENT

Route	Frequency					Total Vehicle Requirement				
	a.m.	Midday	p.m.	Sat.	Sun.	a.m.	Midday	p.m.	Sat.	Sun.
1 Los Angeles via Vermont	60	60	60	60	60	2	2	3	2	2
2 Los Angeles via Crenshaw	60	60	60	60	--	2	2	2	2	--
3 Los Angeles via Gardena	15	35	15	45	45	7	4	8	3	3
4 Riviera-El Camino	60	60	60	60	--	2	2	2	2	--
5 Redondo-Lomita	60	60	60	60	--	1	1	1	1	--
6 Redondo-El Camino	60	60	60	60	--	1	1	1	1	--
7 Western-Vermont	30	30	30	30	30	2	2	2	2	2
School	--	--	--	--	--	9	9	--	--	--
Totals						26*	23*	19	13	7

*Includes school trippers now operated by Gardena, some of which may not have to be operated following expansion of other service.

TABLE 20

SCRTD EXTENSIONS
FREQUENCY AND VEHICLE REQUIREMENT

Route	Frequency					Total Vehicle Requirement				
	a.m.	Midday	p.m.	Sat.	Sun.	a.m.	Midday	p.m.	Sat.	Sun.
6 Vermont	30	30	30	30	40	3	3	3	3	2
84 Western	30	30	30	30	--	4	4	4	4	--
85 Crenshaw	60	60	60	60	--	1	1	1	1	--
96 Normandie	40	40	40	40	40	1	1	1	1	1
114 Lynwood-El Camino	30	30	30	60	--	1	1	1	1	--
607 L.A.-Redondo-Torrance	30	30	30	--	--	1	1	1	--	--
849 San Pedro	60	60	60	60	--	2	2	2	2	--
5 Hawthorne	40	40	40	60	60	3	3	3	2	2
Totals						16	16	16	14	5

APPENDIX A

REAL ESTATE INVENTORY OF POSSIBLE FACILITY SITE LOCATIONS IN THE SOUTH BAY AREA OF LOS ANGELES COUNTY

Coldwell Banker
Management Corporation

Coldwell Banker
MANAGEMENT CORPORATION

February 20, 1979

ATE Management & Service Company, Inc.
617 Vine Street, Suite 800
Cincinnati, Ohio 45202

Attention: Mr. Gary F. Taylor

Reference: The LACTC South Bay Region Study

Gentlemen:

We have completed a study to identify sites which have potential for utilization as bus terminals and maintenance yards. The boundaries of the study area were confined to a primary and secondary area, as noted below and shown on the attached map.

Primary Area

The primary land area is bounded by:

190th Street	on the north
Harbor Freeway	on the east
Sepulveda Boulevard	on the south
Anza Boulevard	on the west

Secondary Area

The secondary land area consists of land lying outside the perimeter of the primary area bounded by:

Artesia Boulevard	on the north
Main Street	on the east
Lomita Boulevard	on the south
Anza Boulevard	on the west

The primary determinants utilized in the study were lot sizes from 12 to 15 acres and zoning sufficient to allow use of the site as a bus maintenance or storage facility. We have included in the study a location map designating the approximate location of each site, as well as individual plat maps for each parcel. We have also included in the report

the ownership of each parcel and a general description of the property. A general value range is included for each site, as well as general comments on the prospects for purchase or lease. This study does not include site, engineering or environmental analysis.

There has been a great rush over the past several years to develop industrial parks in the primary search area. The availability of acreage parcels is rapidly diminishing and almost sold out. The 12 sites listed represent acreage parcels available in the study area currently available for sale or development. Several of these parcels are currently in escrow, or there is active interest for a purchase.

The most likely sites for the R&D use would be Sites 1, 7 and 11. It is imperative that action be taken as soon as possible or all of the above sites will be committed to development.

If we can be of further assistance to you, or if you desire additional information regarding these sites, please do not hesitate to call.

Respectfully submitted,

COLDWELL BANKER MANAGEMENT CORPORATION

Ronald E. Malmfeldt, S.G.A.
Real Estate Analyst

Douglas W. Haney
Assistant Vice President and
Manager - Appraisal Services
Los Angeles

REM:d


SECONDARY AREA
PRIMARY AREA
1
2
3
4
5
6
7
8
9
10
11
12

SITE 1

Location

Northeast Corner of Prairie Avenue and Del Amo Boulevard.

Ownership

Mobil Oil Corporation
612 South Flower Street
Los Angeles, California 90017

Size

31.5 acres

Zoning

M-2

Topography

At grade with 35 foot depression in center of property.

Utilities

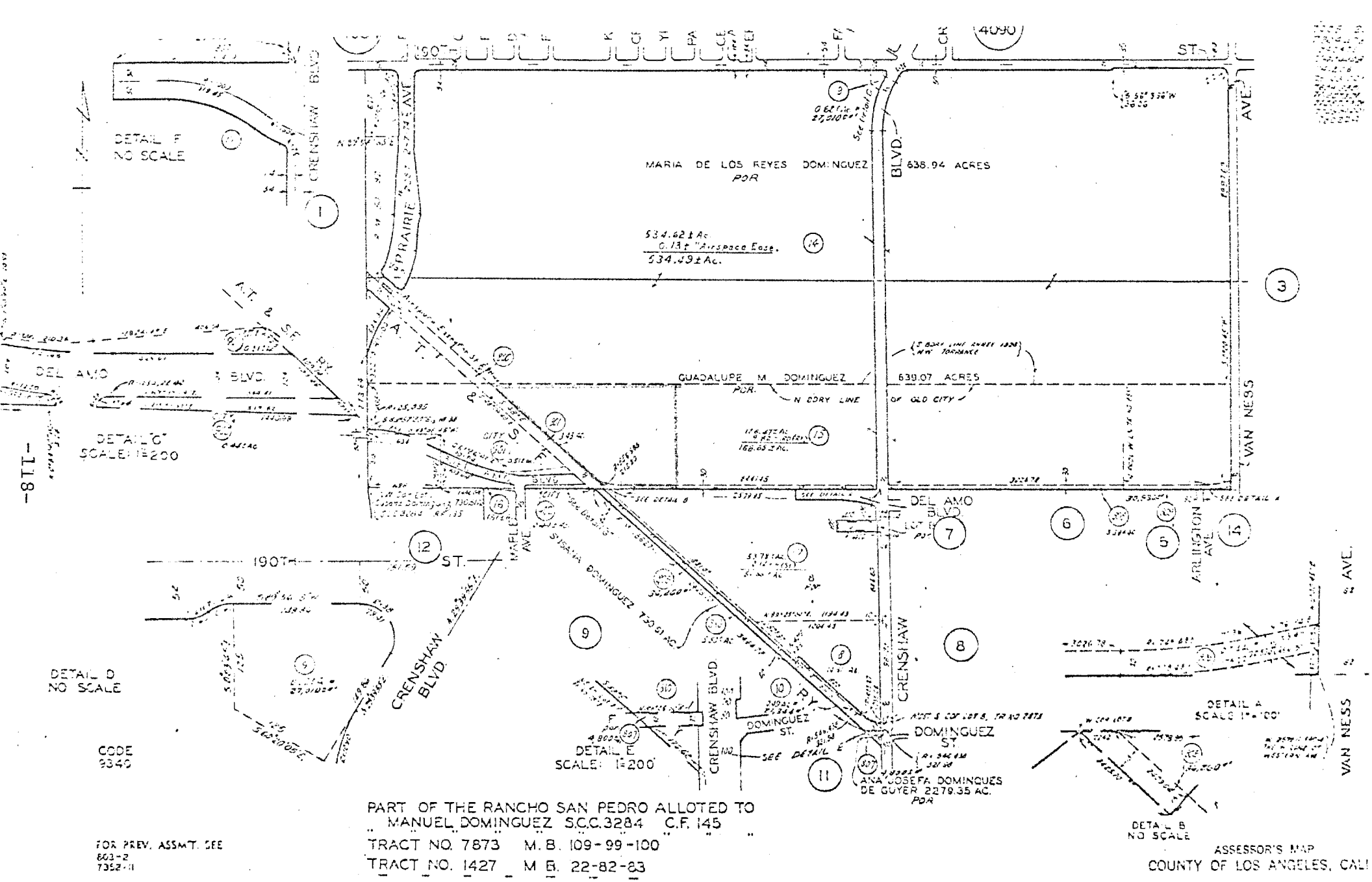
All available.

Approximate Land Value

$3.50 per square foot less abnormal cost to develop.

Remarks

Mobil is planning to dispose of a 31.5-acre portion of their refinery. The land is serviced by Santa Fe. There is a large pit in the center of the lot which will require approximately 50,000 cubic yards of fill dirt. Engineering cost estimates for this work range from $250,000 to $1,000,000 to fill and grade the depression. The operating company is transferring title to the Mobil Foundation to dispose of the property on a tax-free basis. Price will be determined by the directors of the Mobil Foundation.



PART OF THE RANCHO SAN PEDRO ALLOTED TO
MANUEL DOMINGUEZ S.C.C. 3284 C.F. 145

TRACT NO. 7873 M.B. 109-99-100

TRACT NO. 1427 M.B. 22-82-83

FOR PREV. ASSMT. SEE
803-2
7352-11

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALI

SITE 2

Location

North side of Western Avenue, between Torrance Boulevard and Del Amo Boulevard.

Ownership

U.S. Steel Corporation
525 Montgomery Street
San Francisco, California 94101

Size

95-acre master planned industrial park.

Zoning

M-1

Topography

Level

Utilities

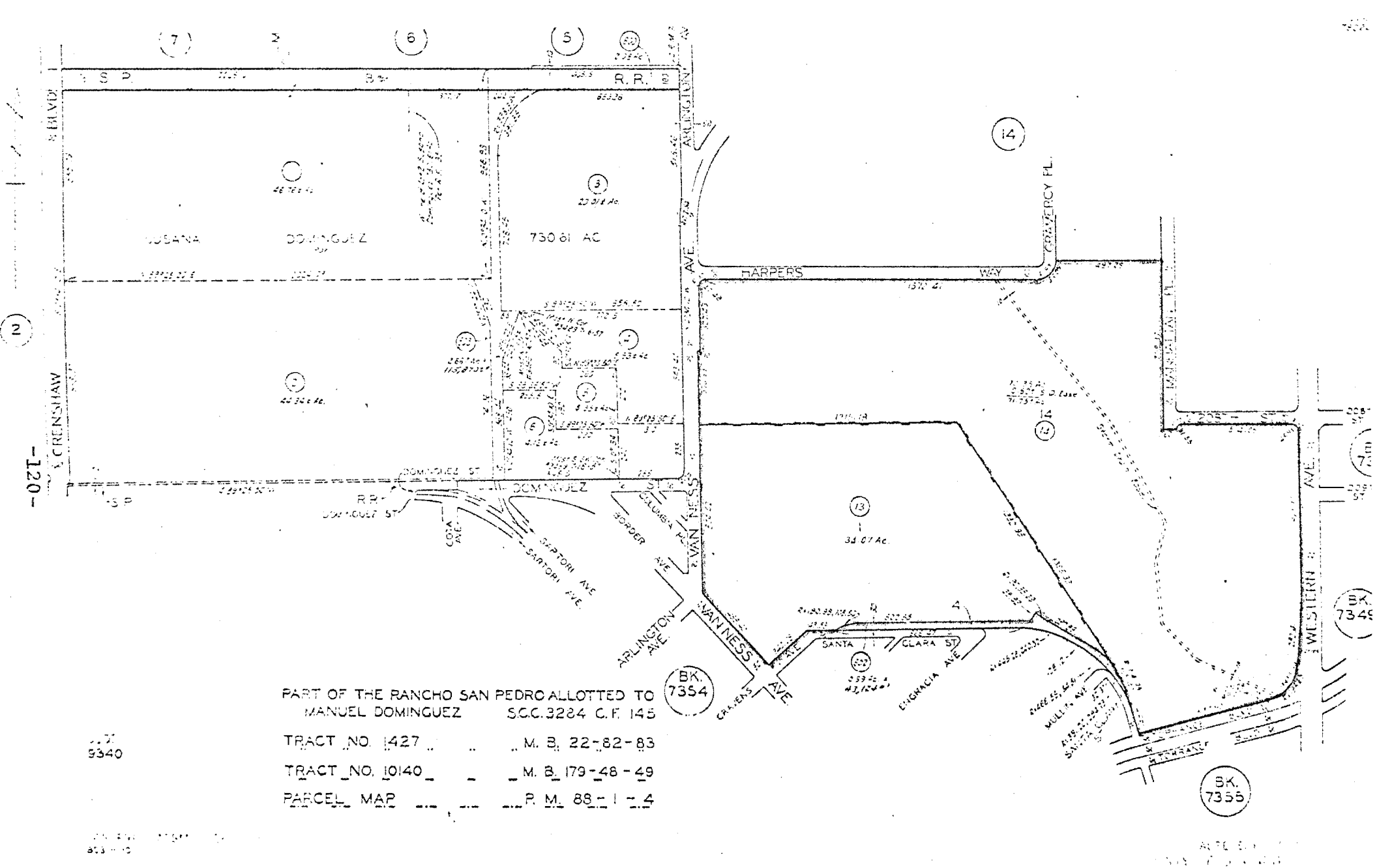
All available.

Appropriate Land Value

$5.00 to $6.00 in a ready-to-build condition.

Remarks

A 15 to 20 acre user could be accommodated in an undeveloped portion of the park. The property would be delivered in a fully improved ready-to-build condition.


PART OF THE RANCHO SAN PEDRO ALLOTTED TO
MANUEL DOMINGUEZ S.C.C. 3284 C.F. 145
TRACT NO. 1427 M. B. 22-82-83
TRACT NO. 10140 M. B. 179-48-49
PARCEL MAP P. M. 88-1-4
730.61 AC
ARLINGTON AVE
VAN NESS AVE
HARPERS WAY
SANTA CLARA ST
ENGRACIA AVE
CRENSHAW BLVD
WESTERN AVE
BK. 7354
BK. 7355
-120-

Site 2

Location

North of Lomita Boulevard and east of Crenshaw Boulevard at the present terminus of Early Drive.

Ownership

City of Torrance

Size

29.1 acres.

Zoning

M-2

Topography

At grade.

Utilities

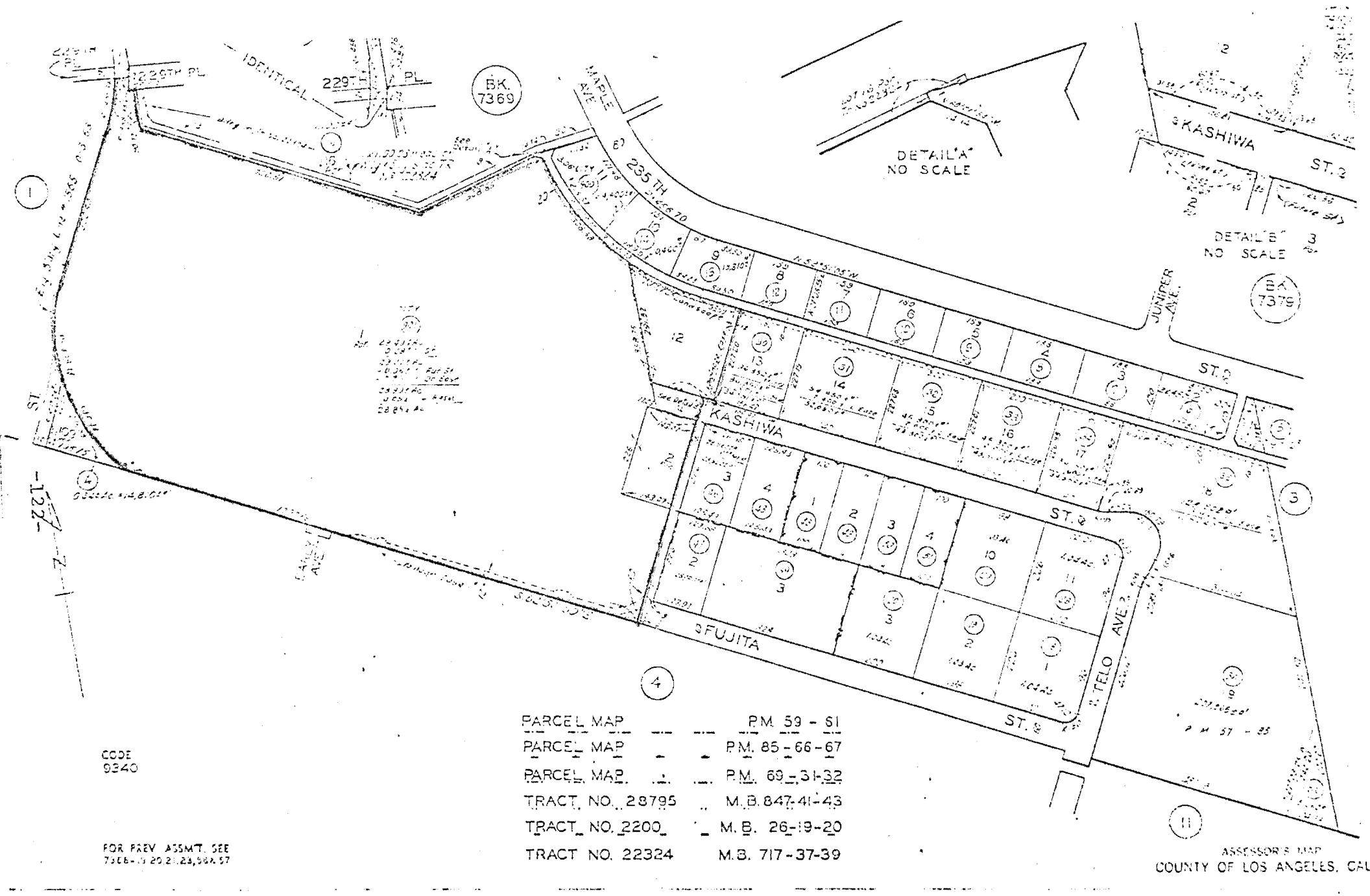
All available.

Approximate Land Value

Minimum bid is $3.00 per square foot. Estimate final sale will be at $3.50 per square foot.

Remarks

Property is listed as surplus property. Being auctioned by sealed, written bids on February 22, 1979. Oral bidding for finalists will be held February 27, 1979. Minimum bid is $3,830,000. Oral bidding starts at $100,000 higher than highest written bid, and then proceeds in $25,000 increments.


IDENTICAL
229TH PL
BK. 7369
MAPLE AVE
235 TH
DETAIL 'A'
NO SCALE
KASHIWA ST. 2
DETAIL 'B'
NO SCALE
JUNIPER AVE.
BK. 7379
KASHIWA ST.
FUJITA ST.
TELO AVE
-122-
CODE 9340
PARCEL MAP P.M. 59 - 61
PARCEL MAP P.M. 85 - 66 - 67
PARCEL MAP P.M. 69 - 31 - 32
TRACT NO. 28795 M.B. 847 - 41 - 43
TRACT NO. 2200 M.B. 26 - 19 - 20
TRACT NO. 22324 M.B. 717 - 37 - 39
FOR PREV. ASSMT. SEE
ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CAL

SITE A

Location:

Northeast corner of Crenshaw Drive and Hawthorne Boulevard in the city of Torrance.

Ownership:

Redevelopment project of the city of Torrance.

Size:

22 acres.

Topography:

Flat.

Terminal:

90% at grade with uphill slope on east side.

Utilities:

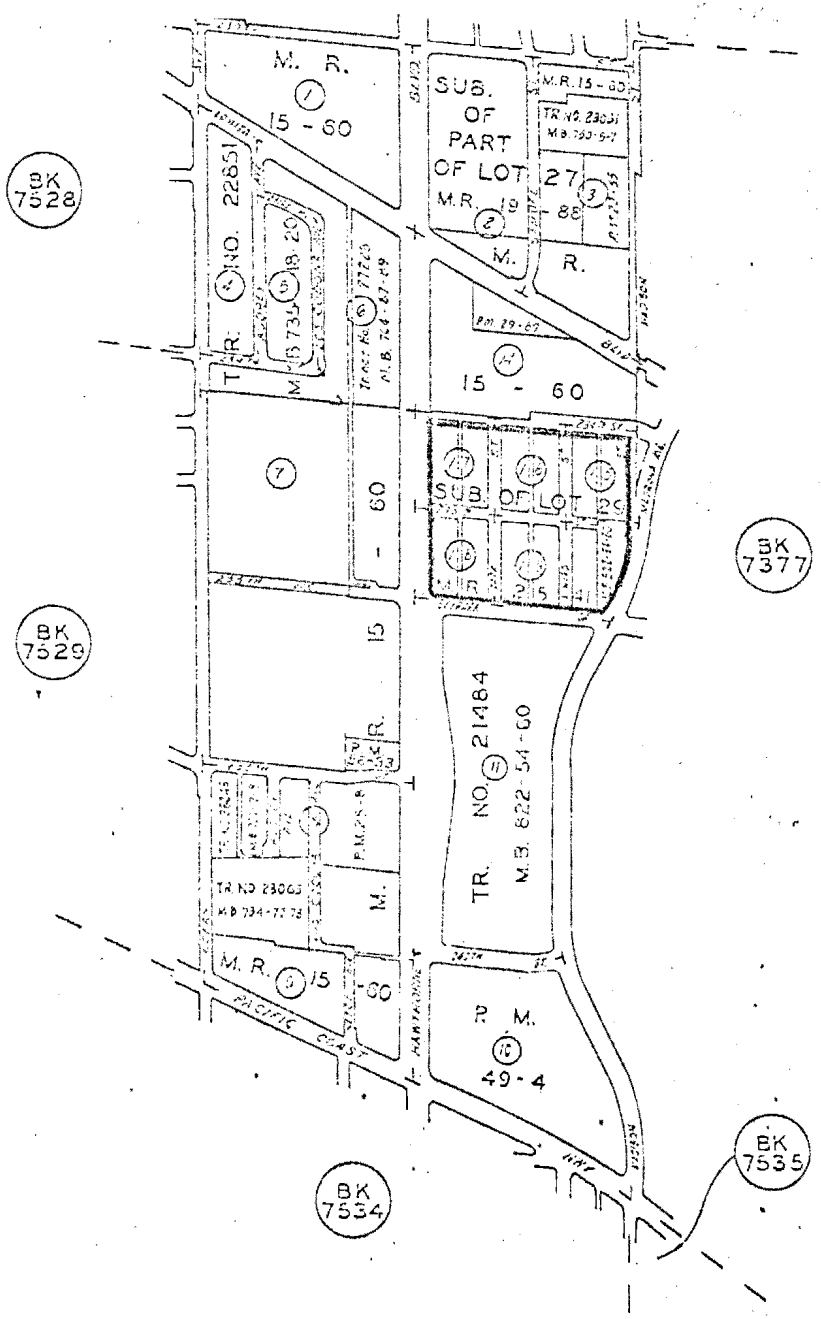
All available.

Approximate Land Value:

$5.00 per square foot.

Remarks:

The city of Torrance is in the process of selecting a developer for the entire parcel. It is anticipated that 400,000 square feet of office and light industrial will be developed. This site is just south of the Secondary Area southern boundary.



INDEX
BOOK 7378
CITY OF TORRANCE

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

SITE 5

Location

One-half block east of Western Avenue with frontage on Pacific Coast Highway and 223rd Street.

Ownership

Victory Oil Company
2301 Pacific Avenue
Long Beach, California 90807

Size

25.5 acres.

Zoning

M-2

Topography

At grade.

Utilities

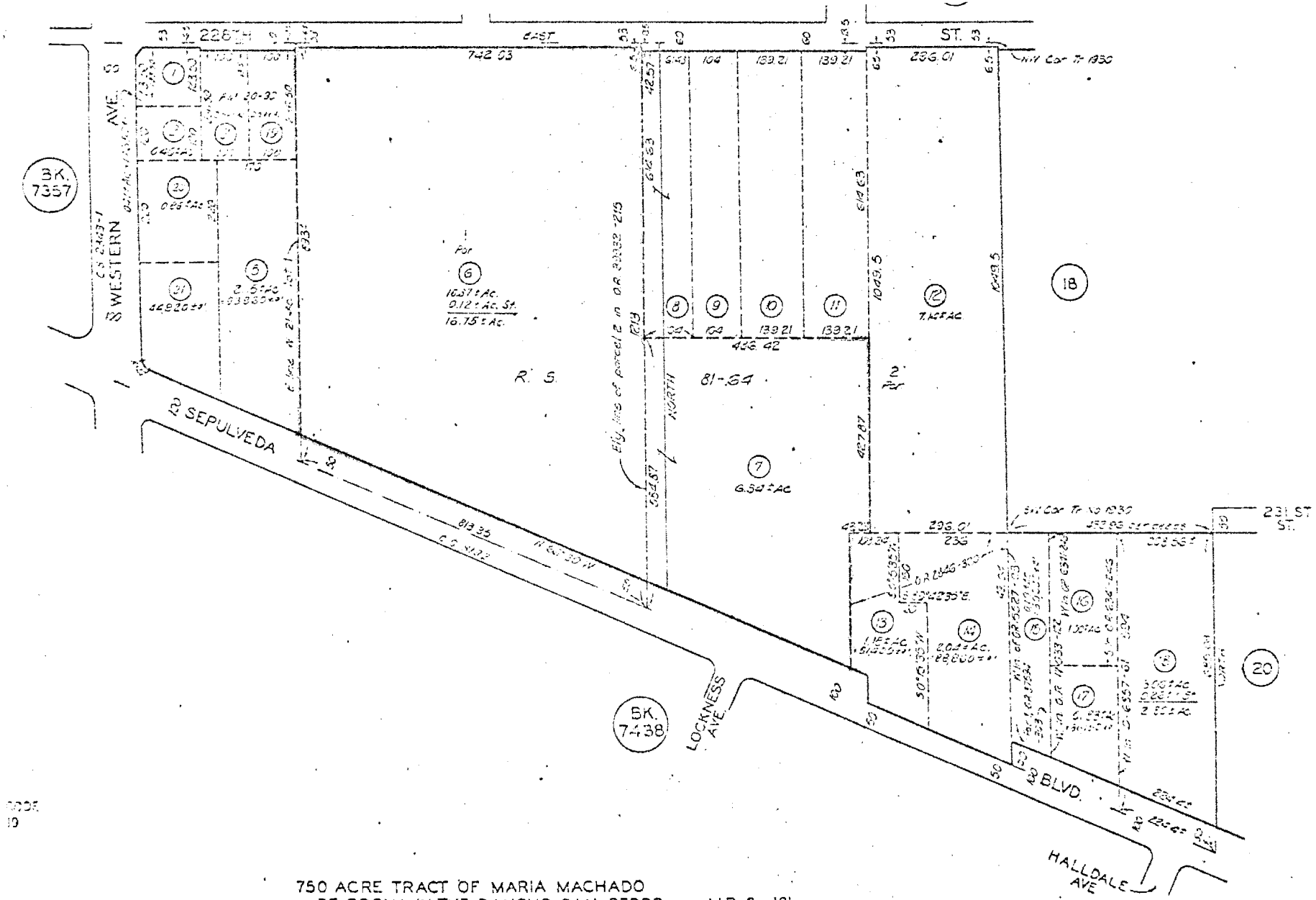
All available.

Approximate Land Value

$3.00 per square foot.

Remarks

This property is currently in escrow at approximately $3.00 per square foot to a residential developer who is seeking a rezoning to R-1. In the event the rezoning is not accomplished, this site will probably be back on the market.



750 ACRE TRACT OF MARIA MACHADO DE ROCHA IN THE RANCHO SAN PEDRO M.R. 6 - 161

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

SITE [illegible]

Location

Northeast corner of Sepulveda Boulevard and Normandie Avenue.

Ownership

Western Brass Development Corporation
144 North Spring Street
Los Angeles, California 90012

Size

25 acres.

Zoning

M-2

Topography

At grade along Normandie with uphill slope on Western side of site.

Utilities

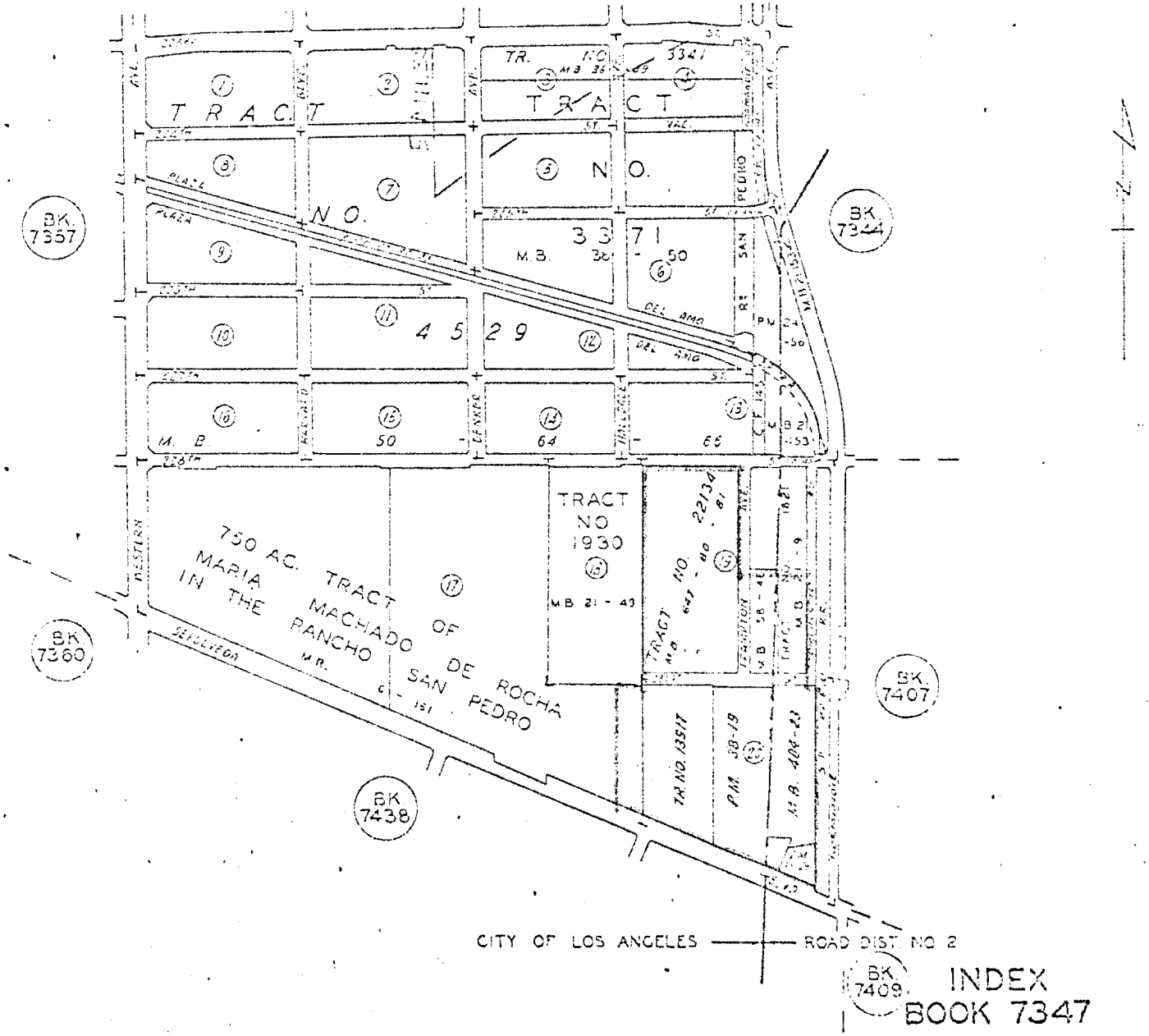
All available.

Approximate Land Value

$4.00 to $5.00 per square foot for finished sites.

Remarks

Property is currently master planned for an industrial park composed of small buildings for sale or lease.



INDEX
BOOK 7347

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

SITE 7

Location

S.E. of Torrey Pines Boulevard with frontage on Figueroa and Nautilus Streets near intersection of Harbor and San Diego Freeways.

Ownership

U.S. Navy
[illegible] Room 2111
Point Mugu, California 93042

Size

14 acres.

Zoning

M-2

Topography

At grade.

Utilities

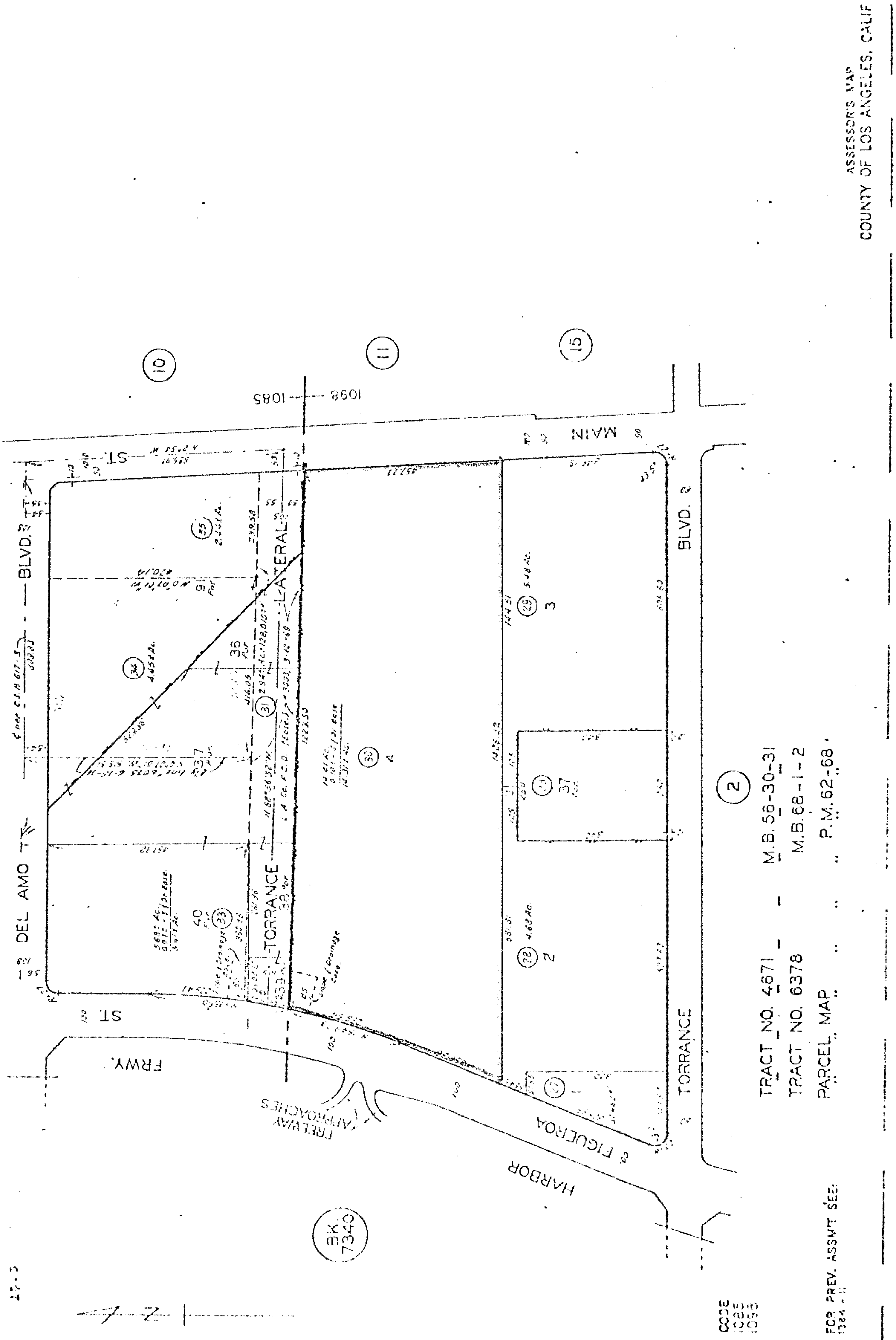
All available.

Approximate Land Value

$1.00 per square foot.

Remarks

Property is a former dump site containing approximately 35 feet of organic fill. There are numerous soil problems and leakage of methane gas. The property was available at $1.05 per square foot and is currently in escrow. It would make an excellent yard storage site if it was paved with proper type of slag, and rented.


ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF
TRACT NO. 4671 - M.B. 56-30-31
TRACT NO. 6378 - M.B. 68-1-2
PARCEL MAP - P.M. 62-68
FOR PREV. ASSM'T SEE:
CODE
1085
1098
BK. 7340
DEL AMO BLVD.
MAIN ST.
TORRANCE BLVD.
HARBOR FRWY.
FIGUEROA ST.
TORRANCE LATERAL
FREEWAY APPROACHES

Location

West side of Main Street, just north of the San Diego Freeway.

Ownership

Watson Land Company
3780 Wilshire Boulevard, Suite 1500
Los Angeles, California 90010

Size

28.74 acres.

Zoning

M-2

Topography

At grade.

Utilities

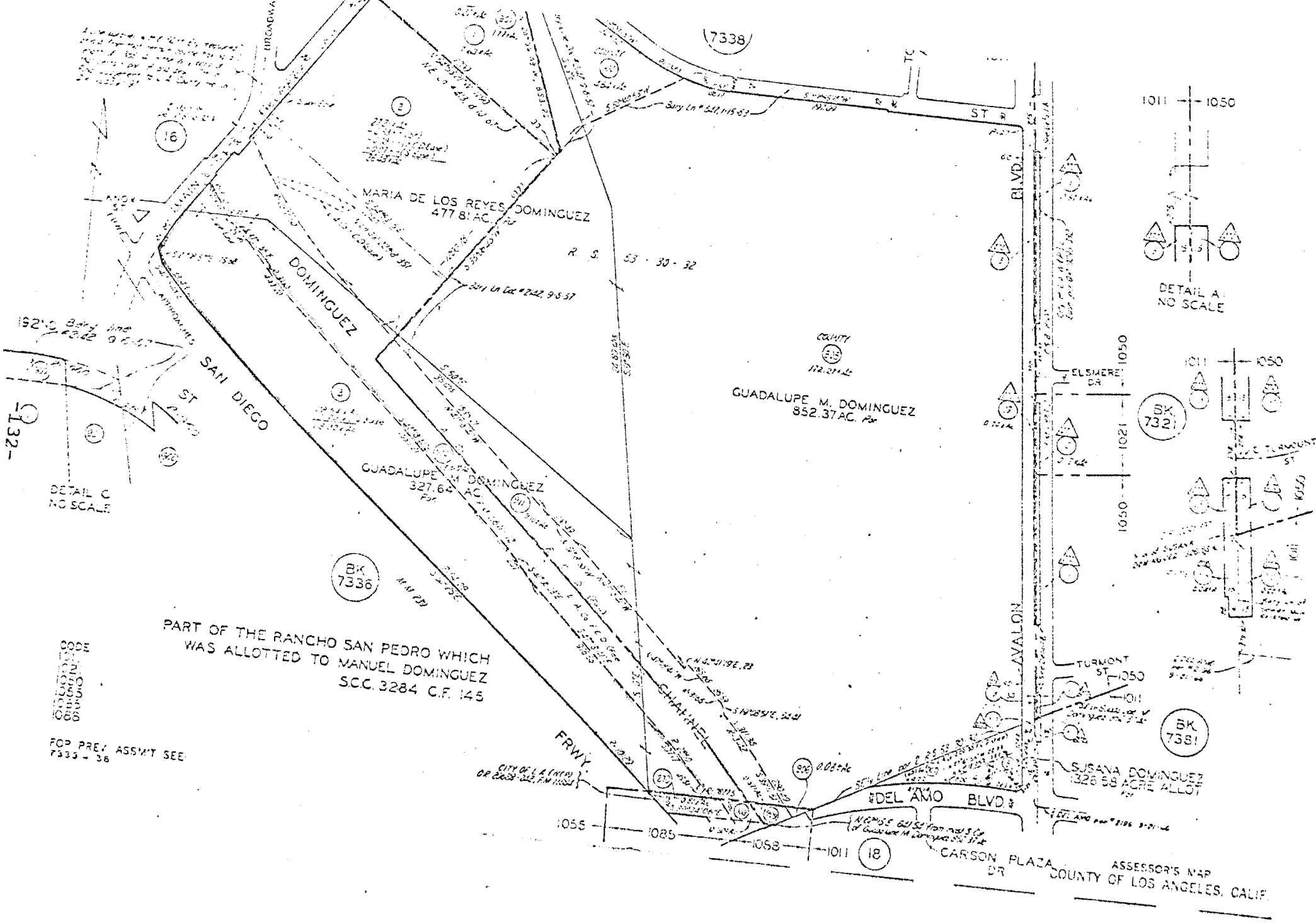
All available.

Approximate Land Value

$1.50 per square foot.

Remarks

Property is a former dump site running parallel to San Diego Freeway. There is a golf course on the north boundary, as well as the Goodyear blimp tie down facility. This property also contains approximately 35 feet of organic fill with the associated soil and methane gas problems. The site has been listed in the past for $1.50 per square foot. There is an additional 7.6-acre site at the southeast corner of 12nd and Main Streets which is also owned by Watson Land Company. It might be possible to build on the smaller site and lease parking space on the larger. Both of these parcels are just outside the eastern boundary of the Secondary Area.


7338
MARIA DE LOS REYES DOMINGUEZ
477.81 AC.
R. S. 53 - 30 - 32
GUADALUPE M. DOMINGUEZ
852.37 AC.
GUADALUPE M. DOMINGUEZ
327.64 AC.
DOMINGUEZ
SAN DIEGO FRWY
AVALON BLVD
DEL AMO BLVD
ELSMERE DR
TURMONT ST
CARSON PLAZA DR
DETAIL A
NO SCALE
DETAIL C
NO SCALE
BK 7321
BK 7336
BK 7381
PART OF THE RANCHO SAN PEDRO WHICH
WAS ALLOTTED TO MANUEL DOMINGUEZ
S.C.C. 3284 C.F. 145
SUSANA DOMINGUEZ
1328.58 ACRE ALLOT
ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

Location

Southwest corner of Inez Street and Vermont Avenue.

Ownership

Carlisle Fairview California, Inc.
2716 South Artesia Boulevard, Room 206
Carson, California 90220

Size

16 acres.

Zoning

M-3

Topography

Level

Utilities

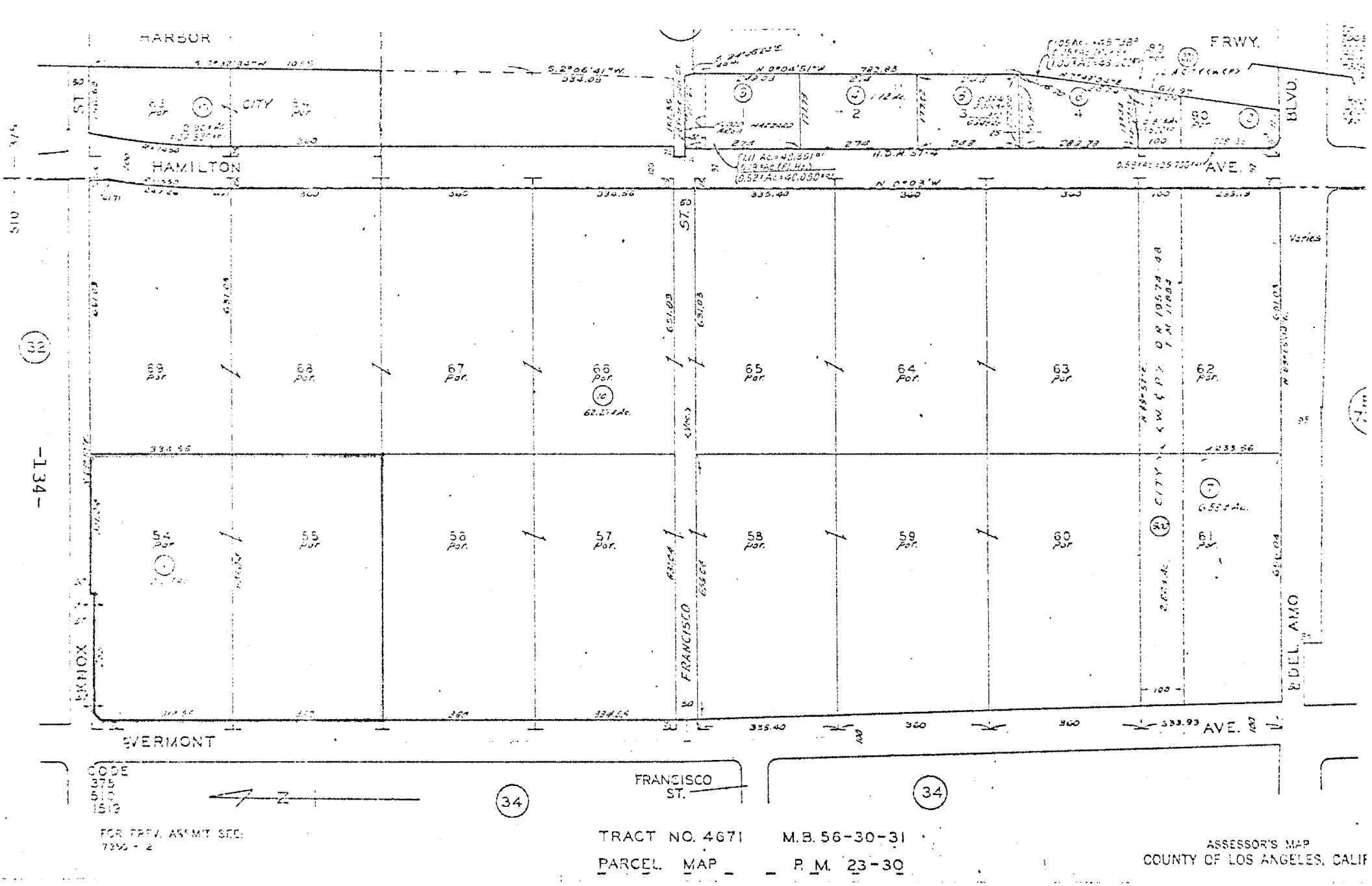
All available.

Approximate Land Value

$3.50 per square foot.

Remarks

Property is adjacent to a 60-acre parcel owned by Golden Eagle Refinery Company, with plans to build tank farm on this site. They may change their minds due to the rapidly increasing land values. It might be possible to buy or lease additional land from Golden Eagle.


HARBOR
FRWY.
HAMILTON
AVE. 9
ST.
BLVD.
FRANCISCO
DEL AMO
VERMONT
AVE. 10
CITY
63 Por.
64 Por.
65 Por.
66 Por.
67 Por.
68 Por.
69 Por.
54 Por.
55 Por.
56 Por.
57 Por.
58 Por.
59 Por.
60 Por.
61 Por.
62 Por.
62.27 Ac.
0.59 Ac.
2.67 Ac.
Varies
CODE
375
510
513
FRANCISCO ST.
34
TRACT NO. 4671 M.B. 56-30-31
PARCEL MAP P.M. 23-30
ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF

Site 4

Location

[illegible] corner of Sepulveda Boulevard and Crenshaw Avenue.

Ownership

Southern Pacific Railroad

Lessee

Clarence Western Oil & Development Company
[illegible] Shoestraker Avenue
[illegible] Palos Verdes, California 90[illegible]

Size

16[illegible] acres.

Zoning

M-2

Topography

At grade.

Utilities

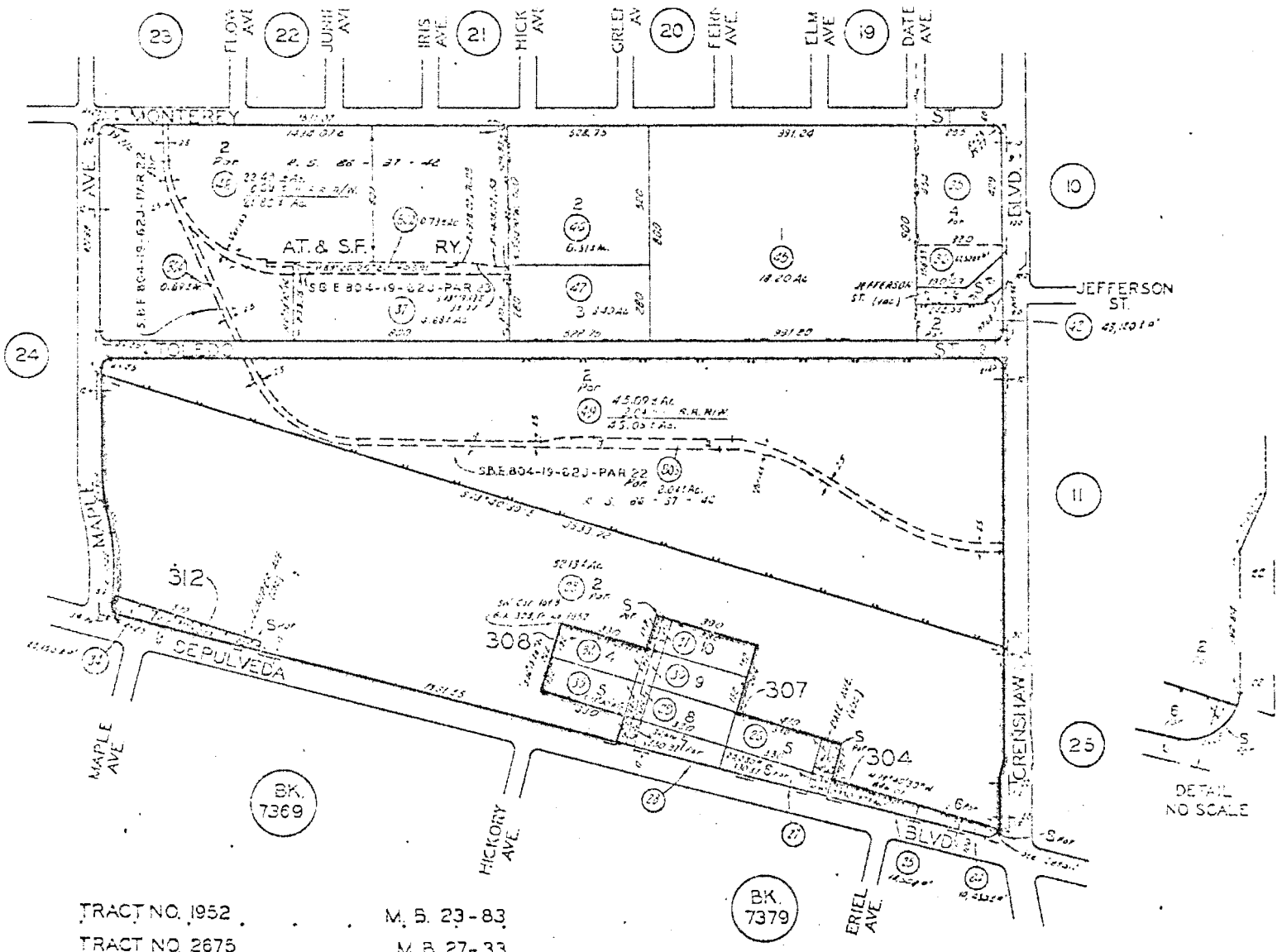
All available.

Approximate Land Value

$2.50 per square foot.

Remarks

Part of the Madrona Swamp which a local group and the High Sierra Club are attempting to save. All proposed developments have been stalled by inability to obtain permits. City of Torrance has proposed putting a golf course on site thereby preserving natural environment.



CODE
9340

TRACT NO. 1952	M. B. 23-83
TRACT NO. 2675	M. B. 27-33
TRACT NO. 10778	M. B. 184-12-14
TRACT NO. 10777	M. B. 184-30-31
PARCEL MAP	P. M. 42-28

FOR FREE ACCNT SEE:
[illegible]

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

SITE II

Location:

North side of Del Amo, running from Vermont Avenue to Normandie Avenue.

Ownership:

[illegible] to Fairview California, Inc.
[illegible] Beverly Hills, [illegible]
[illegible], California 90210

Size:

[illegible] plus a 5.9-acre water and power department easement along south boundary.

Zoning:

M-2

Topography:

Level

Utilities:

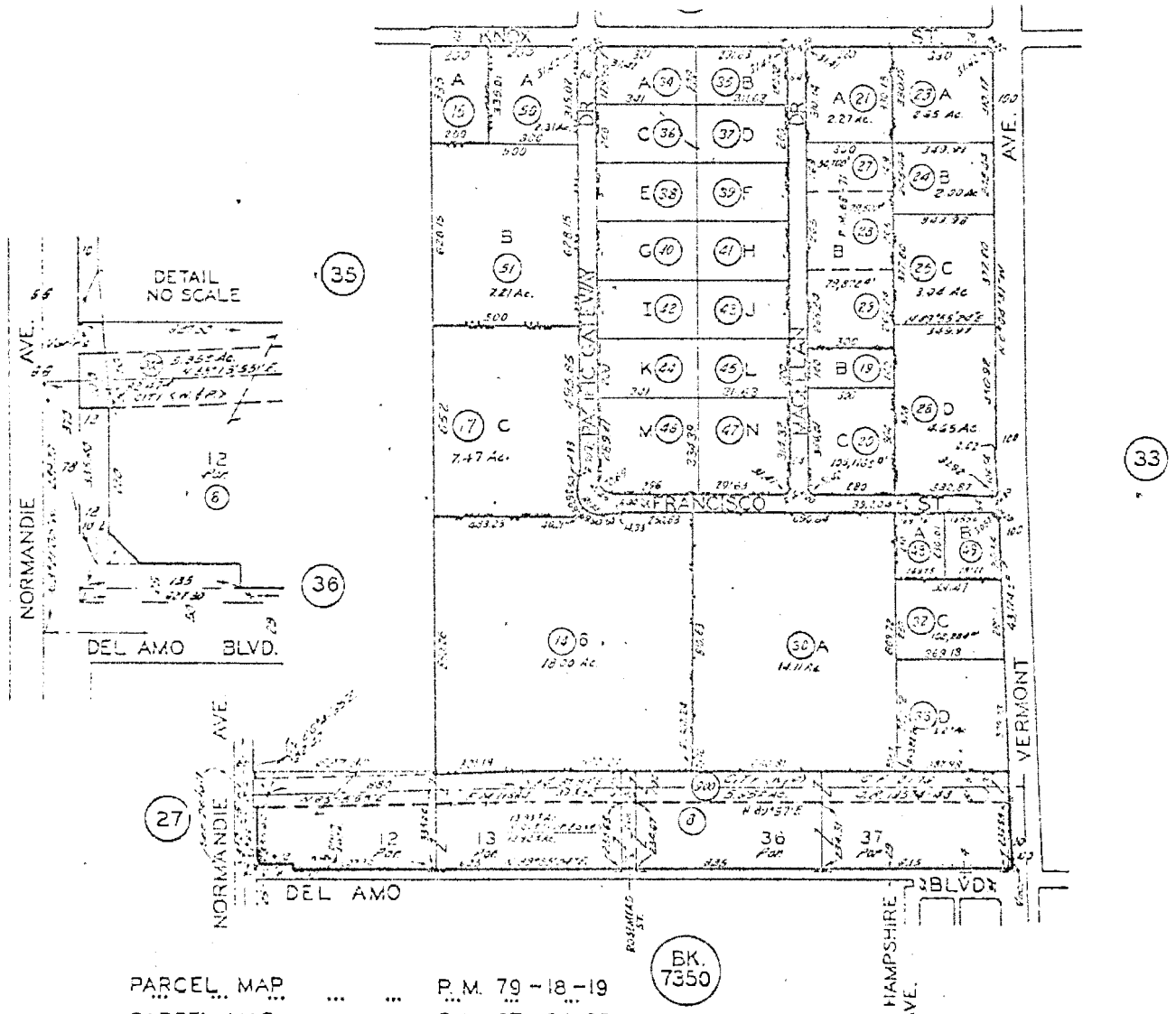
All available.

Approximate Land Value:

$2.00 per square foot.

Remarks:

An excellent site for vehicle storage and maintenance. Difficult to develop due to narrow site and easement for transmission lines. Also, underground pipeline easements exist. Possible that parking could be arranged under power line easement on a lease basis. Triangle Steel, an adjacent owner has expressed interest in a portion of the land for storage. This site won't last long.



CODE
510

PARCEL MAP ... P.M. 79-18-19
PARCEL MAP ... P.M. 67-94-95
PARCEL MAP ... P.M. 68-69-70
PARCEL MAP ... P.M. 62-64
TRACT NO. 4671 M.B. 56-30-31
PARCEL MAP ... P.M. 61-79-80

PARCEL MAP ... P.M. 76-14
PARCEL MAP ... P.M. 63-99
TRACT NO. 32036 M.B. 851-12-14
PARCEL MAP ... P.M. 61-81-82

FOR PREV. ASSMT SEE:
7350-12
7351-31

ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CALIF.

Site [illegible]

Southwest corner Victoria Street and Avalon Boulevard

Ownership

State of California (California State University at Dominguez Hills)

Size

Substantial owners land along Avalon Boulevard.

Zoning

M-2

Topography

Level at Avalon Boulevard with uphill grade toward east.

Utilities

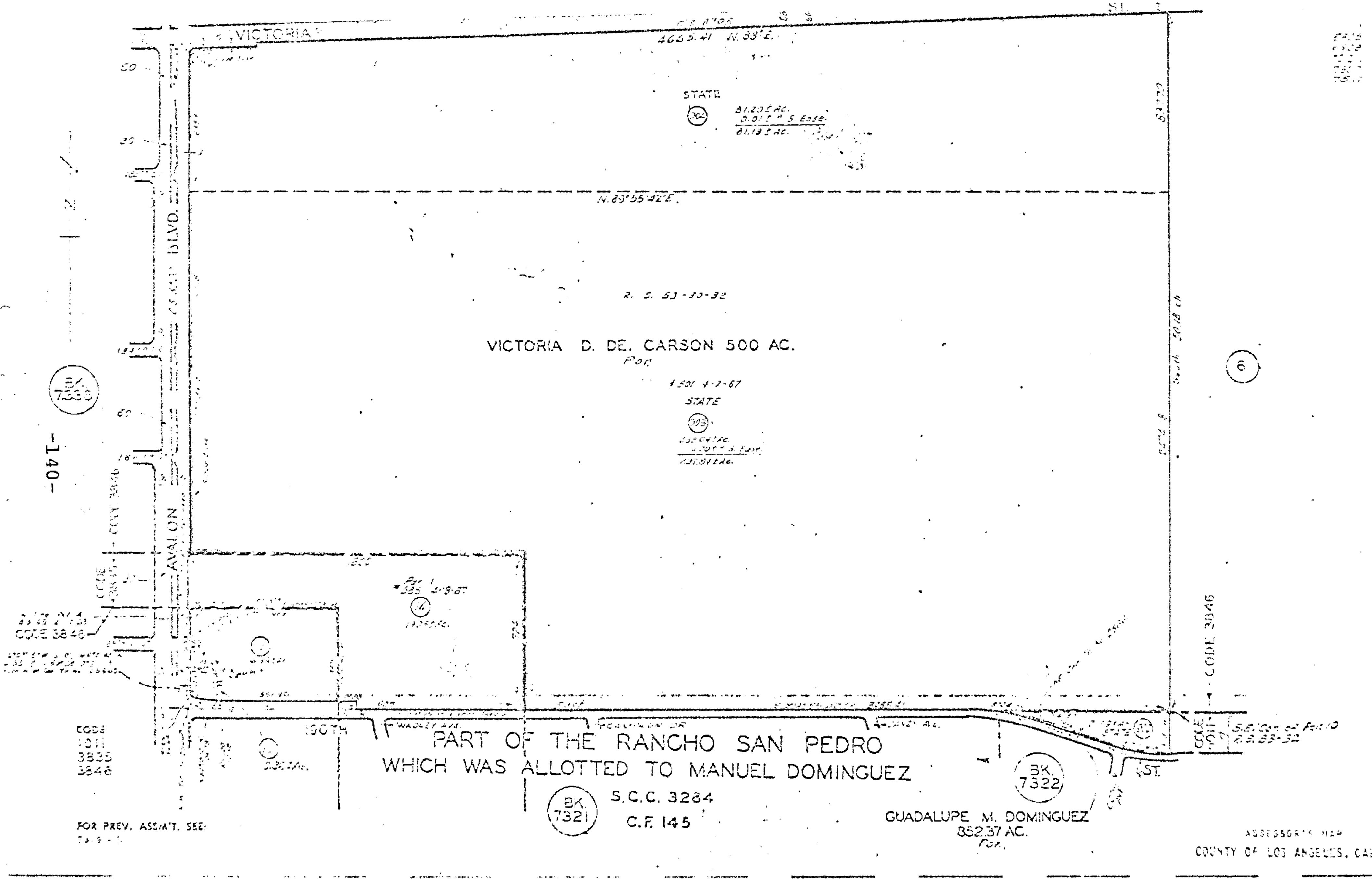
All available.

Approximate Land Value

$2.00 to $2.50 per square foot.

Remarks

This site is outside the study boundaries. It is possible that with the declining enrollment at the state colleges and budget cutbacks due to Proposition 13, a lease arrangement could be obtained.


VICTORIA
4655.41 N.88°E.
STATE
VICTORIA D. DE. CARSON 500 AC.
Por.
R. S. 53-30-32
N.89°55'42"E.
STATE
AVALON
BLVD.
190TH
CODE 3846
CODE
1011
3835
3846
PART OF THE RANCHO SAN PEDRO
WHICH WAS ALLOTTED TO MANUEL DOMINGUEZ
S.C.C. 3284
C.F. 145
BK. 7321
BK. 7322
BK. 7339
GUADALUPE M. DOMINGUEZ
852.37 AC.
Por.
ST.
FOR PREV. ASS'M'T. SEE:
ASSESSOR'S MAP
COUNTY OF LOS ANGELES, CA

LIMITING CONDITIONS

This appraisal is made expressly subject to the conditions and stipulations following:

1. No responsibility is assumed for matters which are legal in nature, nor is any opinion on the title rendered herewith. This appraisal assumes good title, responsible ownership and competent management.

2. Except as noted, any liens or encumbrances which may now exist have been disregarded, and the property has been appraised as though free of indebtedness.

3. Except as noted, this appraisal assumes the land to be free of adverse soil conditions which would prohibit development of the property to its highest and best use.

4. This appraisal is of surface rights only, and no analysis has been made of the value of subsurface rights, if any.

5. Disclosure of the contents of this appraisal report is governed by the By-Laws and Regulations of the American Institute of Real Estate Appraisers of the National Association of Realtors.

6. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraiser or the firm with which he is connected, or any reference to the American Institute of Real Estate Appraisers or to the M.A.I. or R.M. Designation) shall be disseminated to the public through advertising media, public relations media, news media, sales media or any other public means of communication without the prior written consent and approval of the undersigned.

CERTIFICATION

The undersigned does hereby certify that, except as otherwise noted in this appraisal report:

1. We have no present or contemplated future interest in the real estate that is the subject of this appraisal report.

2. We have no personal interest or bias with respect to the subject matter of this appraisal report or the parties involved.

3. To the best of our knowledge and belief, the statements of fact contained in this appraisal report upon which the analyses, opinions and conclusions expressed herein are based, are true and correct.

4. This appraisal report sets forth all of the limiting conditions (imposed by the terms of our assignment or by the undersigned) affecting the analyses, opinions and conclusions contained in this report.

5. This appraisal report has been made in conformity with and is subject to the requirements of the Code of Professional Ethics and Standards of Professional Conduct of the American Institute of Real Estate Appraisers of the National Association of Realtors.

6. No one other than the undersigned prepared the analyses, conclusions and opinions concerning real estate that are set forth in this appraisal report.

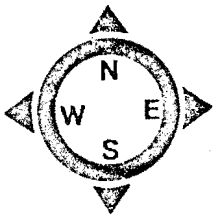
Ronald E. Malmfeldt, S.G.A.

Douglas W. Haney

APPENDIX B

SCHEMATIC ILLUSTRATIONS OF CURRENT TRANSIT RIDERSHIP ON MUNICIPALLY OPERATED BUS ROUTES IN THE SOUTH BAY AREA

TORRANCE RT.1 SCHEMATIC*

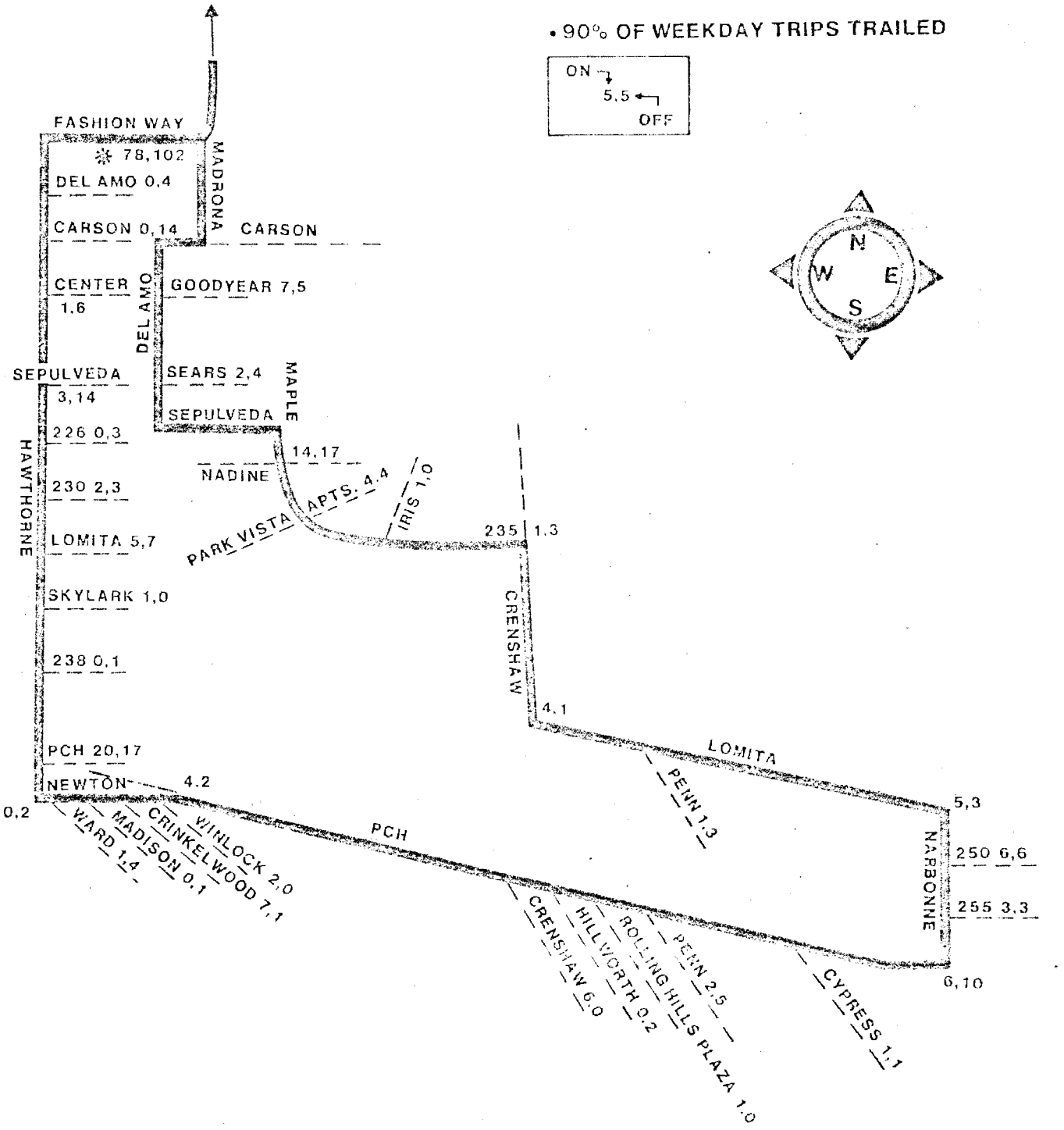


* 90% OF WEEKDAY TRIPS TRAILED

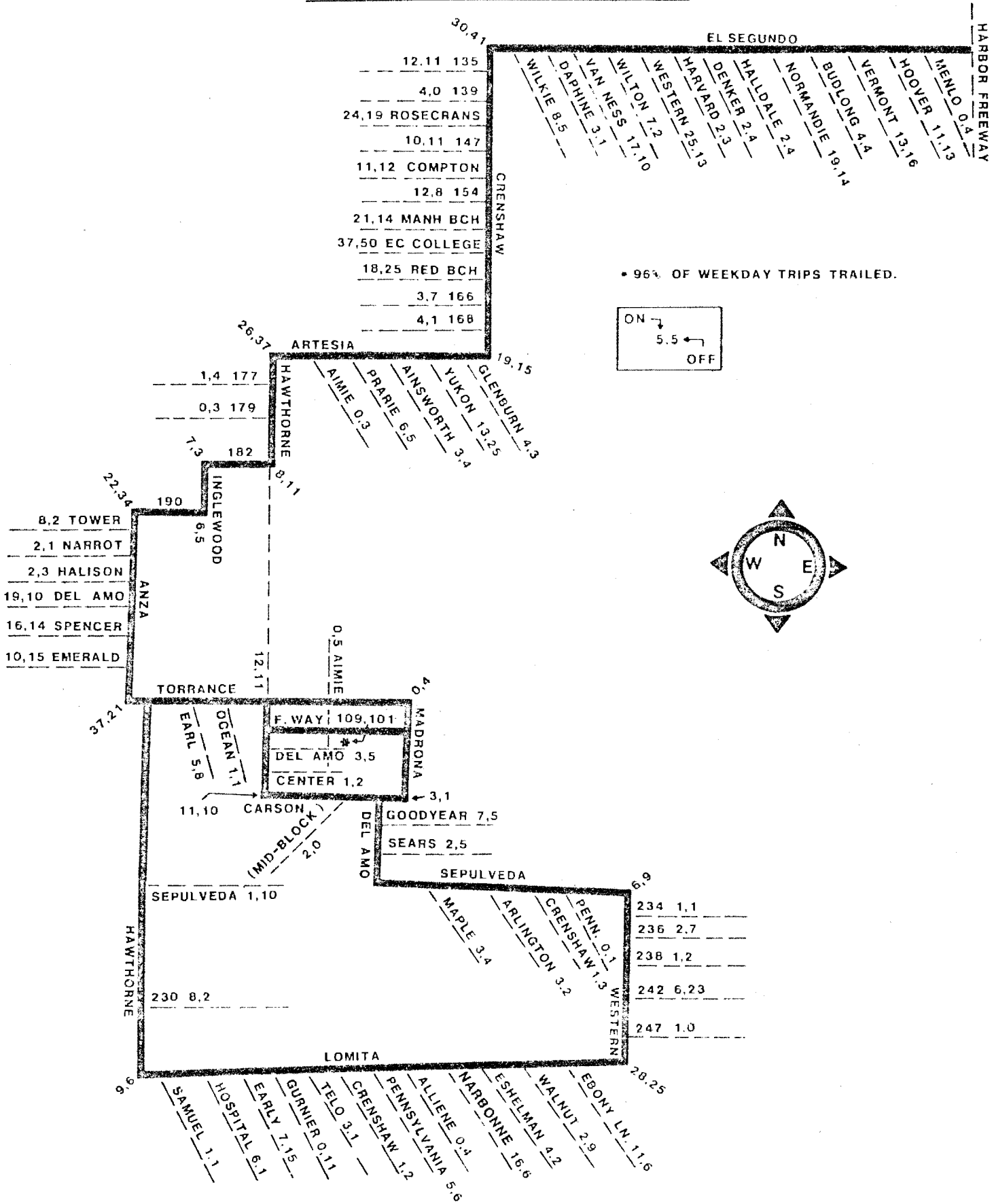
ON
5.5
OFF

EL SEG. 91,34
132 4,5
135 5,8
138 1,3
140 8,28
141 0,4
FIGUEROA
ROSECRANS 41,43
150 1,1
COMPTON 1,3
152 0,1
REDONDO 19,39
157 22,11
ALONDRA 11,11
160,124
GARDENA 16,33
HOOVER 4,8
170 8,6
ARTESIA 2,2
182 18,19
ELECTRIC 5,0
186 5,7
187 2,0
188 0,1
190 14,15
KNOX 0,8
FRANCISCO 1,0
DEL AMO 8,21
BARON 2,9
TORRANCE 32,28
JAVELIN 9,9
214 3,11
35,77
HOSPITAL 170,116
BUDLONG 14,12
NORM. 42,25
DENKER 40,35
HARVARD 1,4
WESTERN 18,18
ABALONE 3,1
BORDER 1,2
28,30
CARSON
CABRILLO *
111,61
TORRANCE TERMINAL
EL PRADO 1,1
SARTORI 0,7
ENGRACIA 0,4
CRAVENS 5,3
ARLINGTON 4,1
COTA 1,0
MADRID 8,3
CRENSHAW 8,11
ELM 1,0
FERN 0,3
HICKORY 0,3
MAPLE 15,10
CITY HALL 2,6
8,9
TORRANCE
FASHION WAY
(CONT. NEXT PAGE)

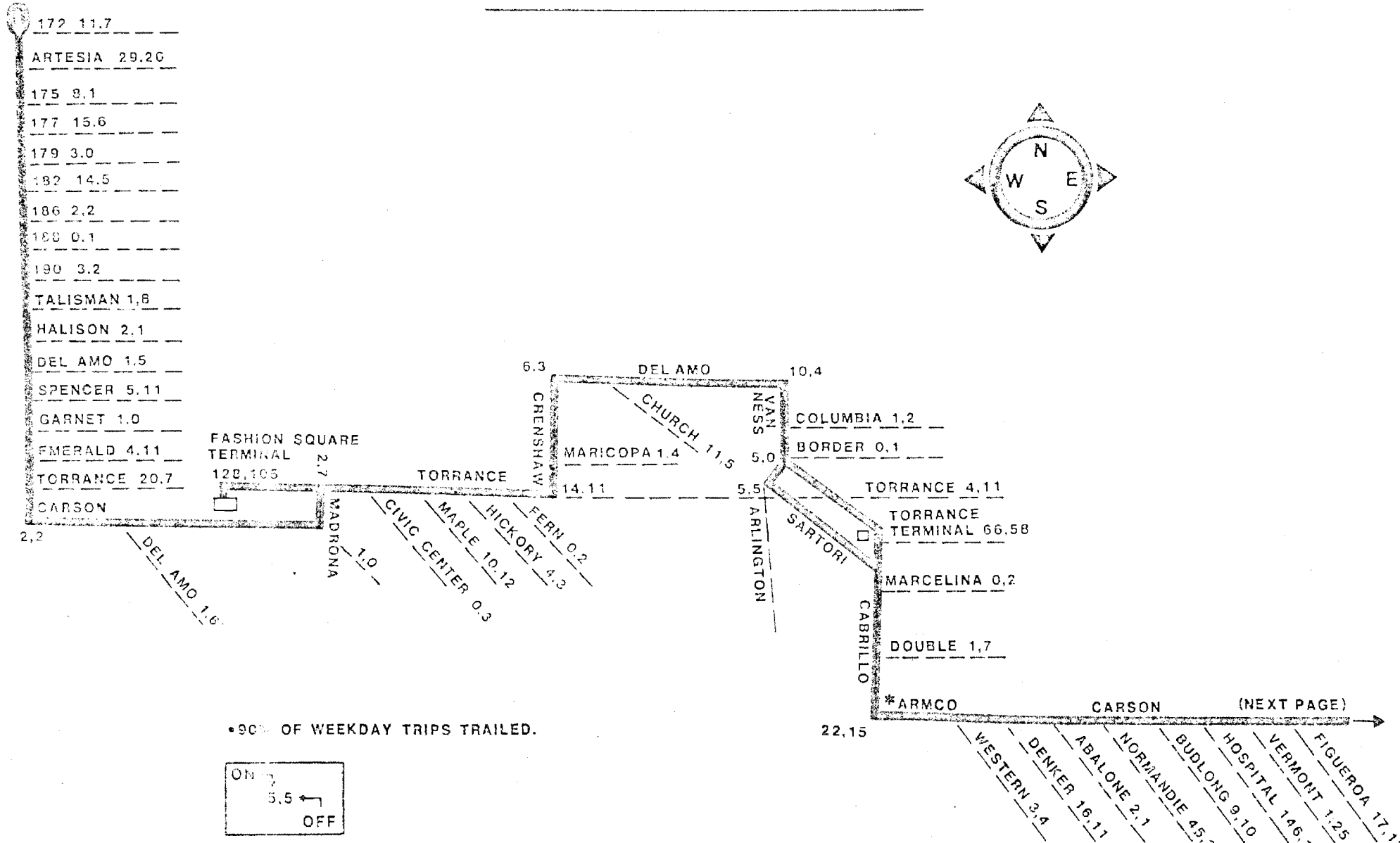
TORRANCE RT. 1 SCHEMATIC *
(CONT. SOUTH LOOP)



TORRANCE RT. 2 SCHEMATIC*



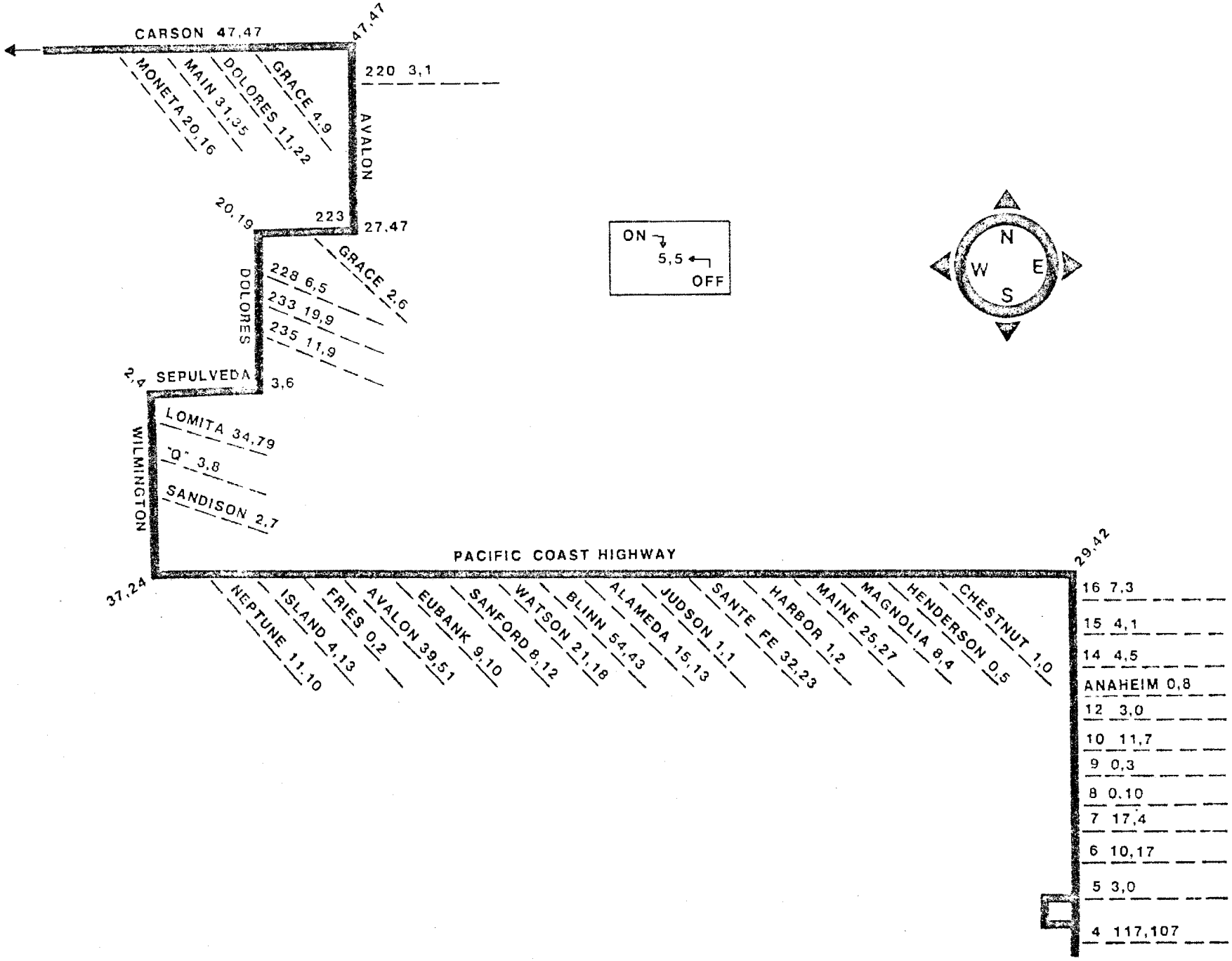
TORRANCE RT. 3 SCHEMATIC*



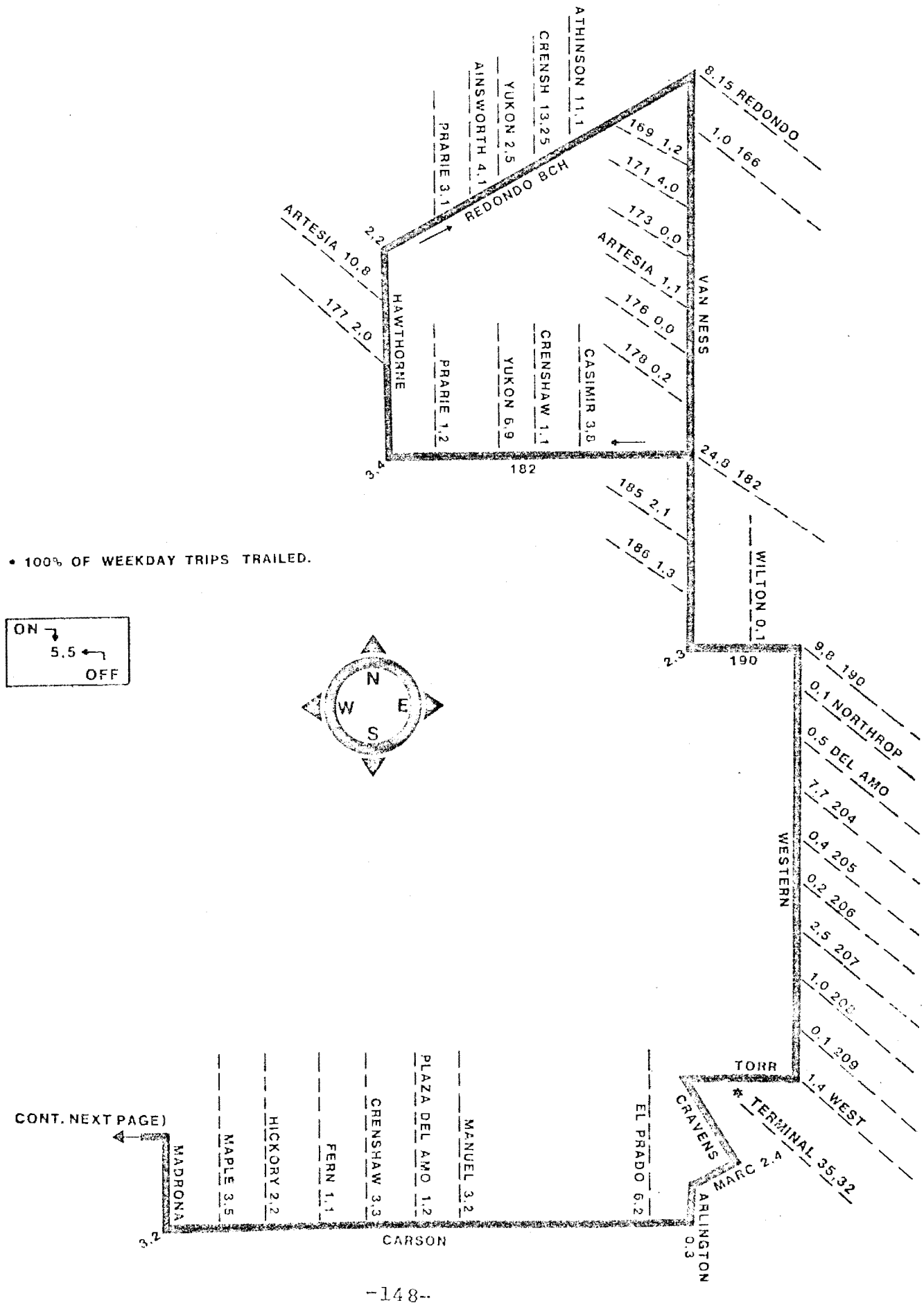
*90% OF WEEKDAY TRIPS TRAILED.

TORRANCE RT. 3 SCHEMATIC

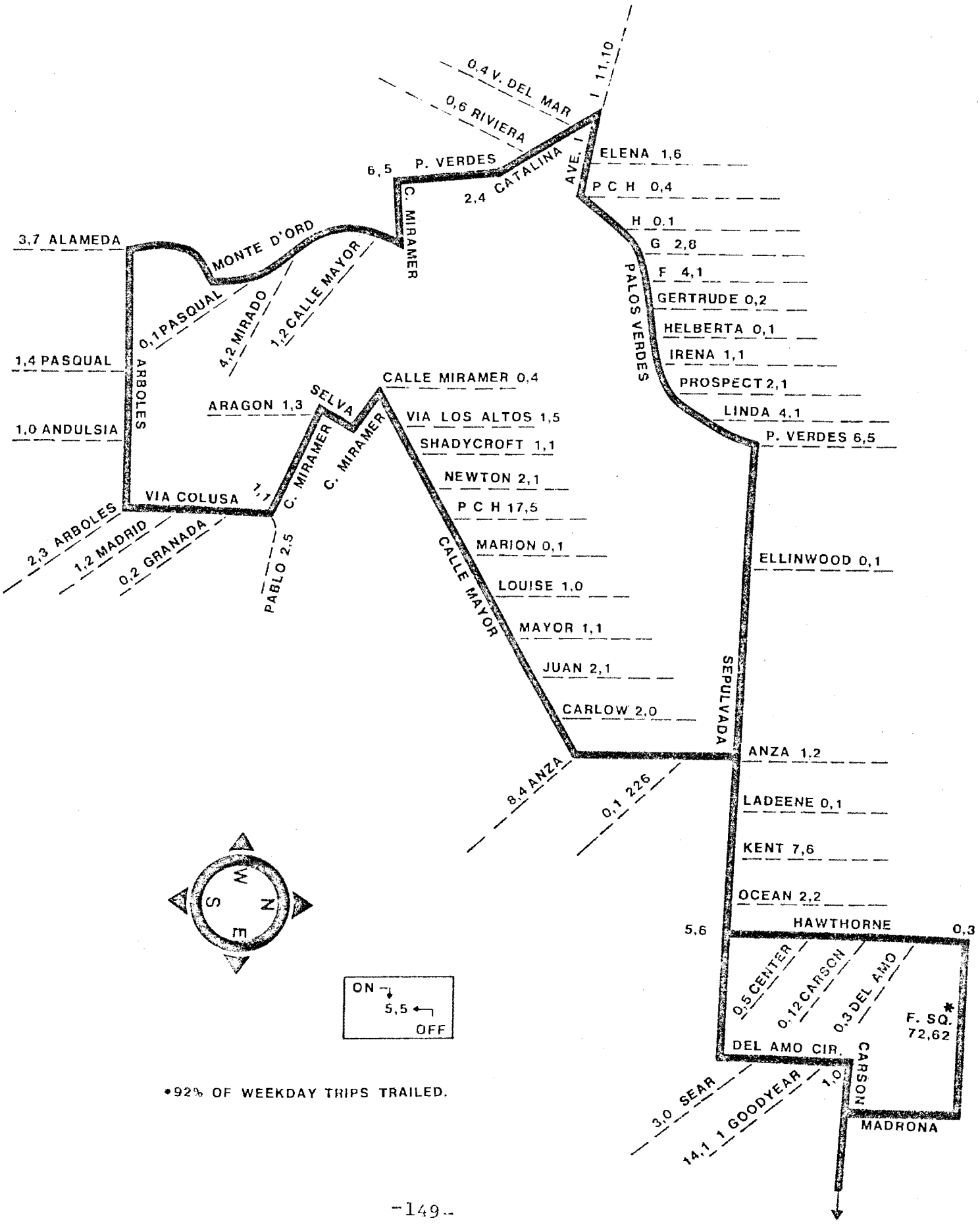
(CONT.)



TORRANCE RT. 4 EL CAMINO LOOP SCHEMATIC*

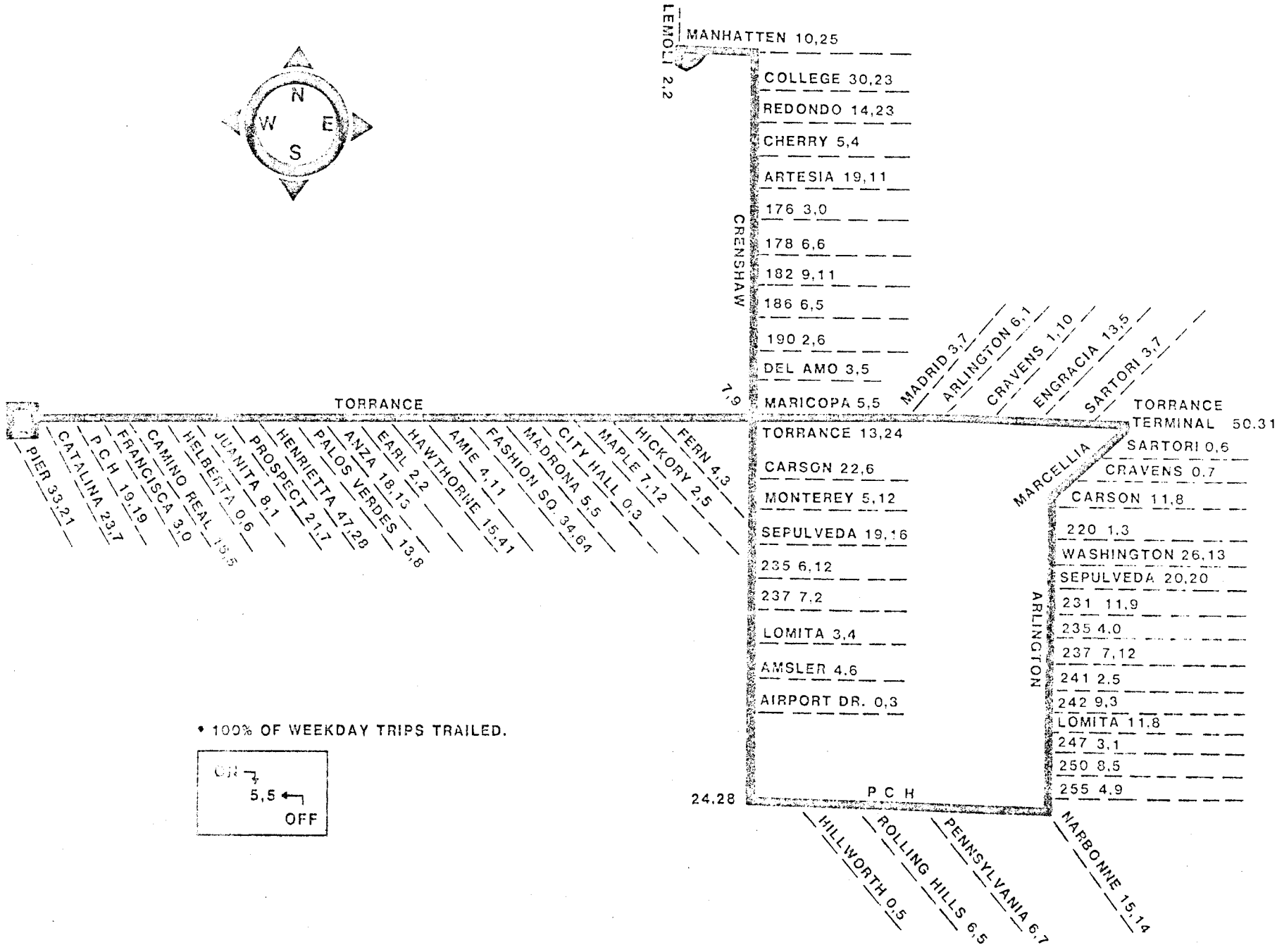


TORRANCE RT. 4 RIVIERA LOOP SCHEMATIC*
(CONT.)



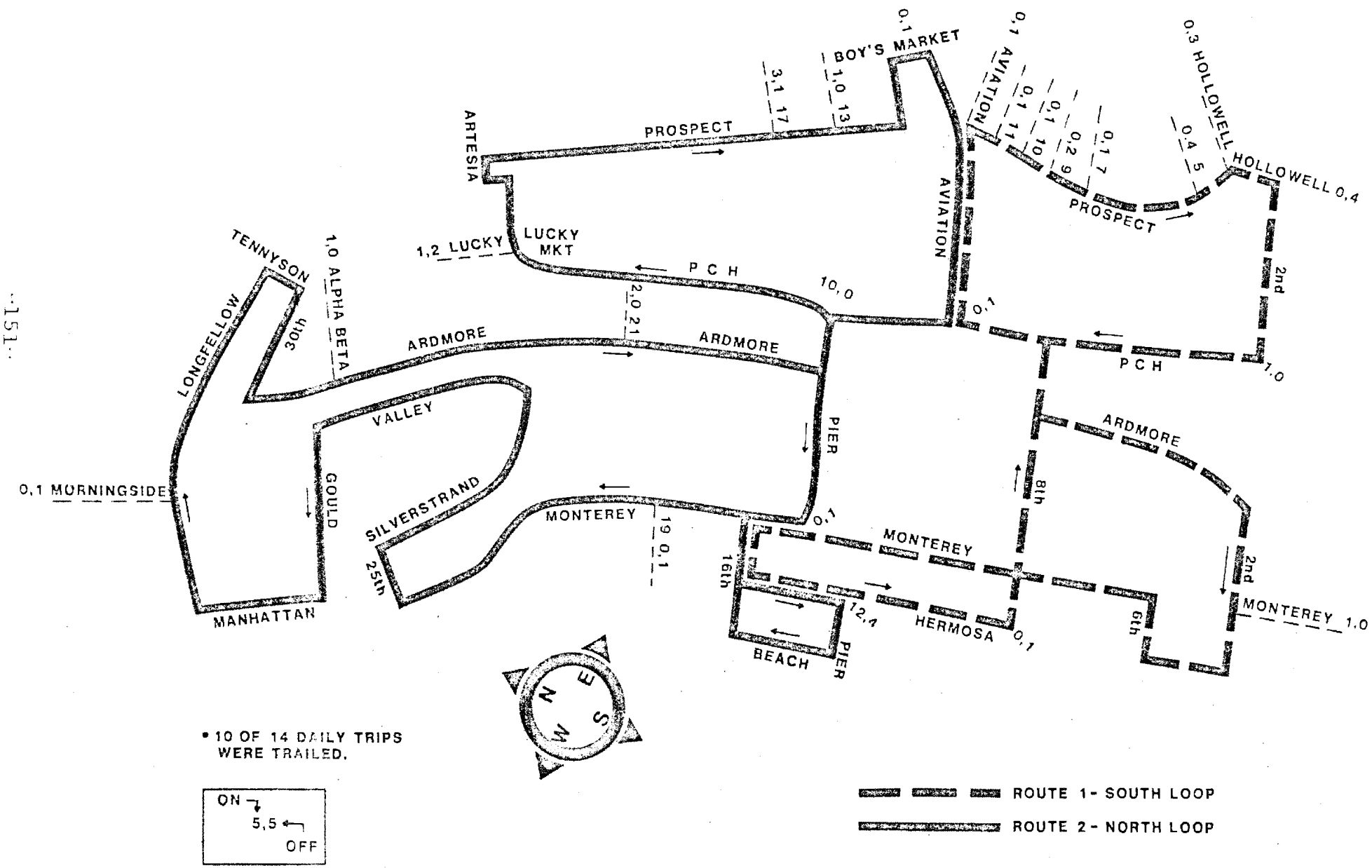
*92% OF WEEKDAY TRIPS TRAILED.

TORRANCE RT. 5 SCHEMATIC*



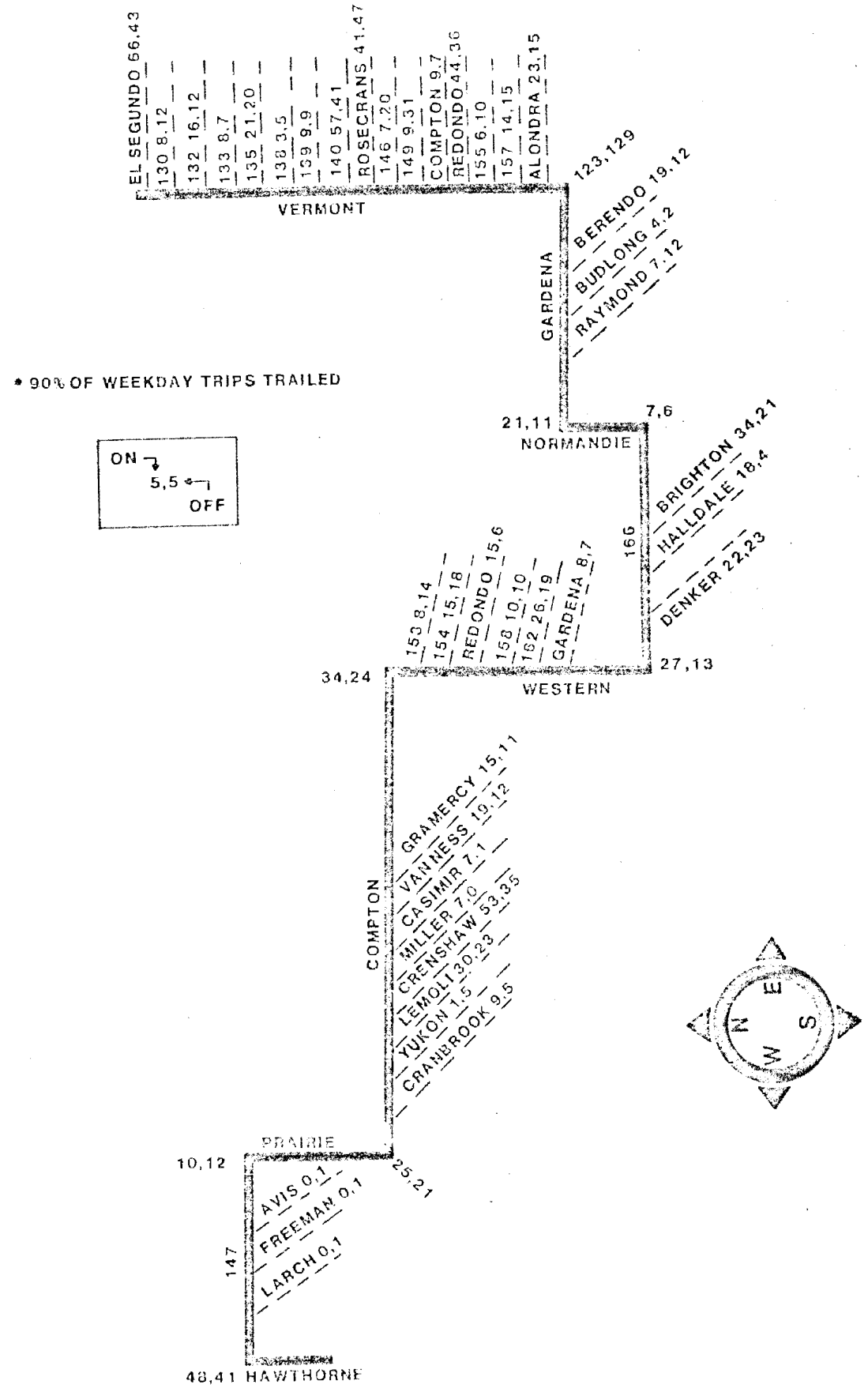
* 100% OF WEEKDAY TRIPS TRAILED.

HERMOSA BEACH CITY BUS SCHEMATIC*

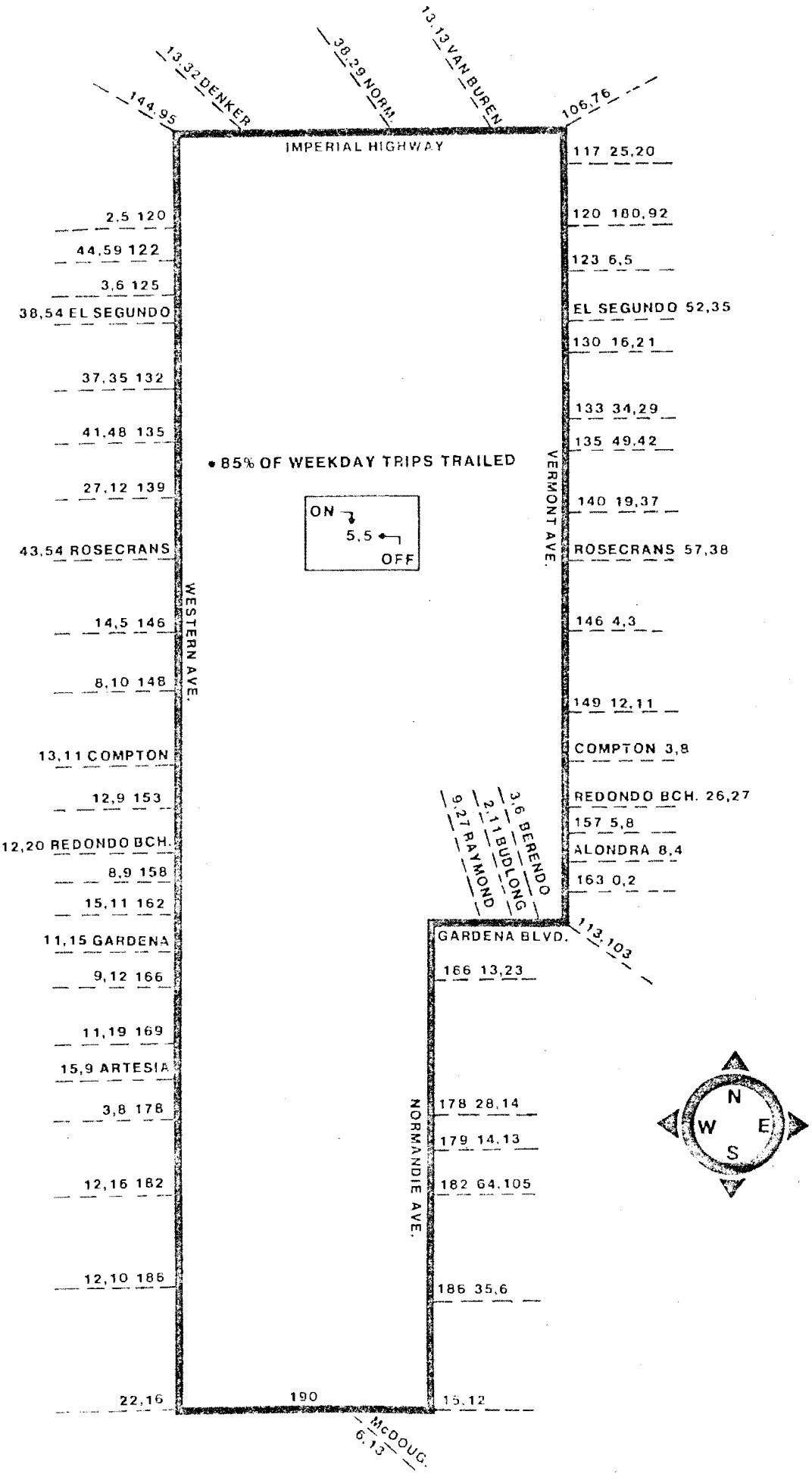


* 10 OF 14 DAILY TRIPS WERE TRAILED.

GARDENA RT. 1 SCHEMATIC*



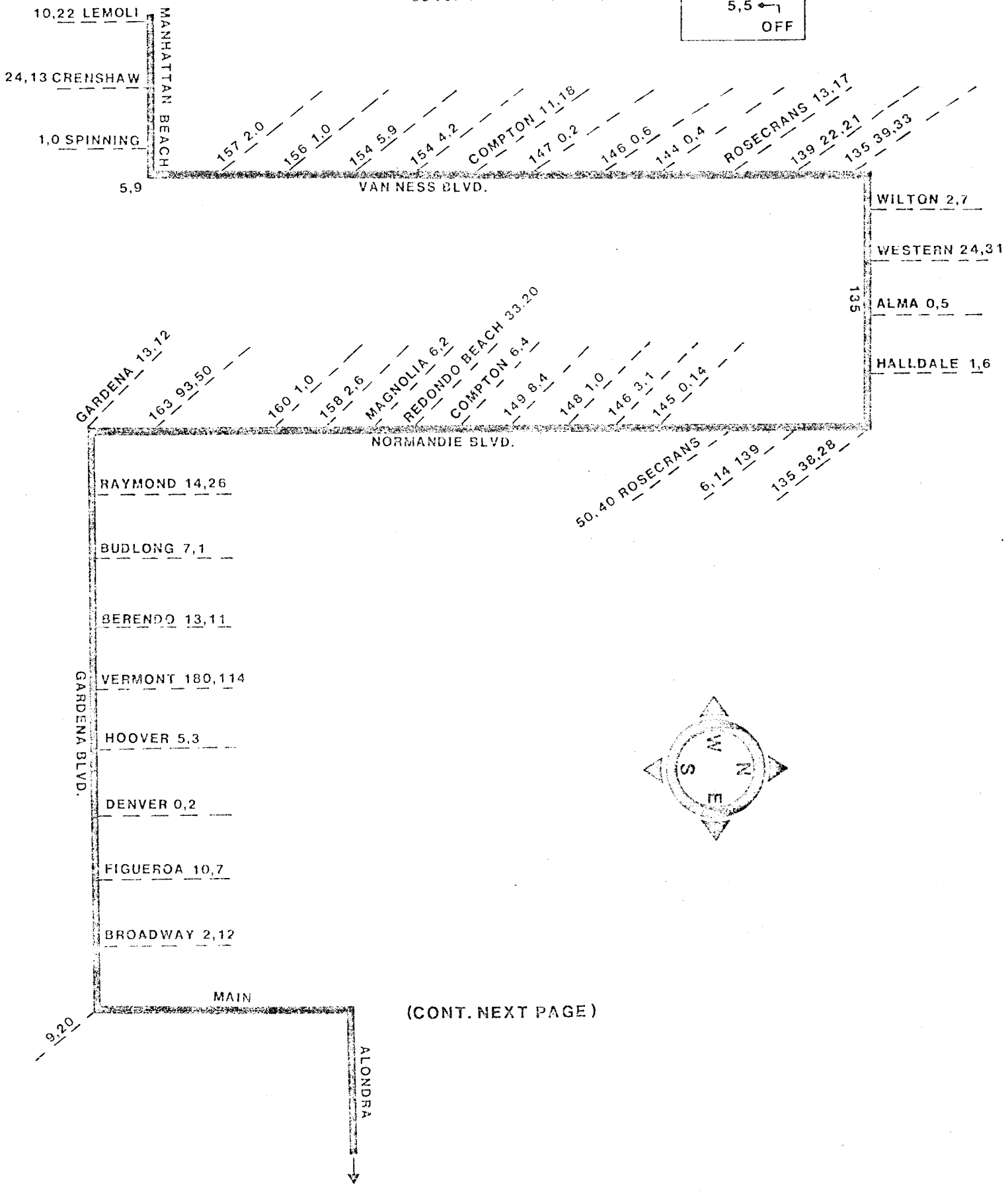
GARDENA RT. 2 SCHEMATIC*



GARDENA RT.3 SCHEMATIC*

95% OF WEEKDAY TRIPS TRAILED

ON 5,5 OFF



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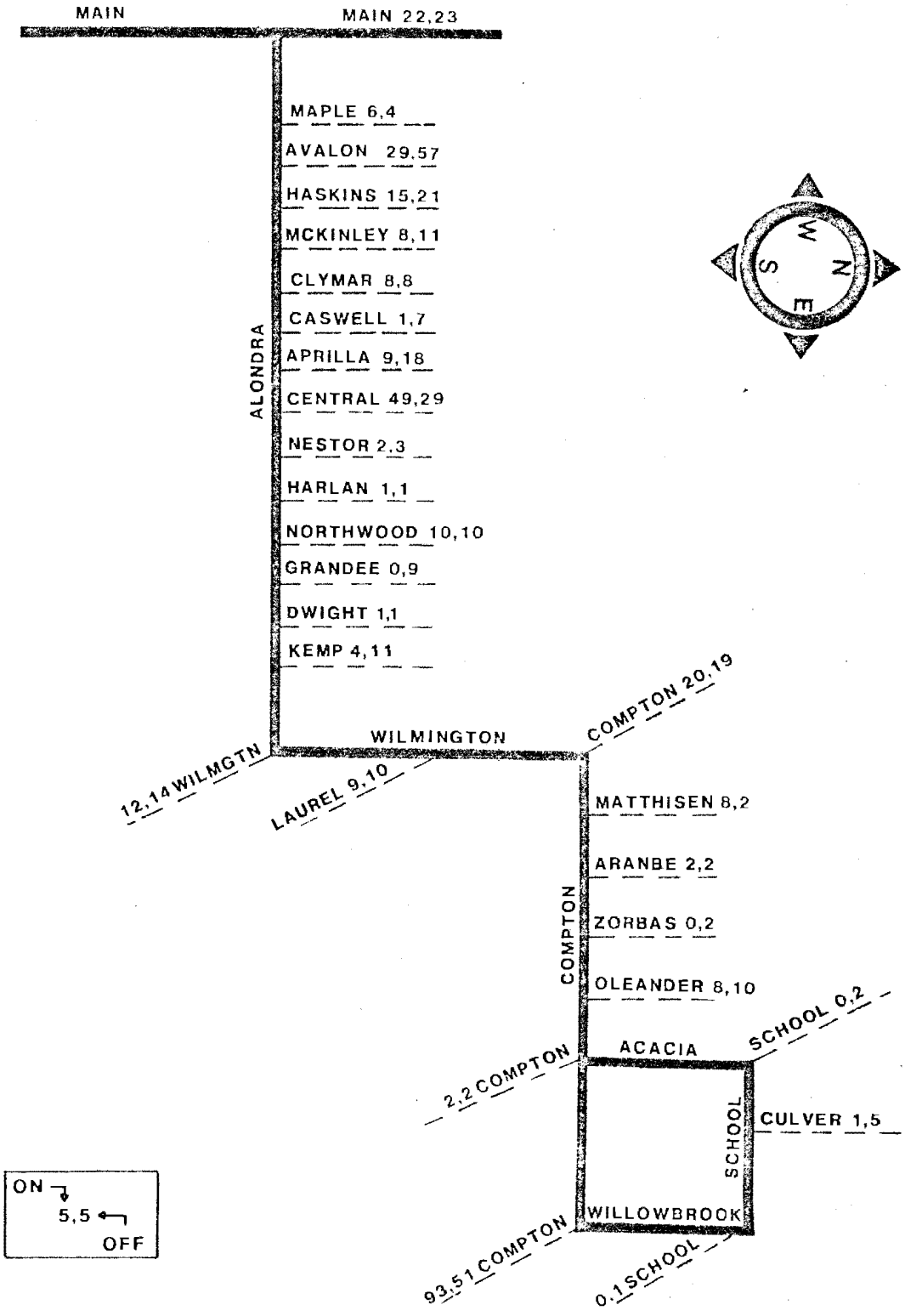
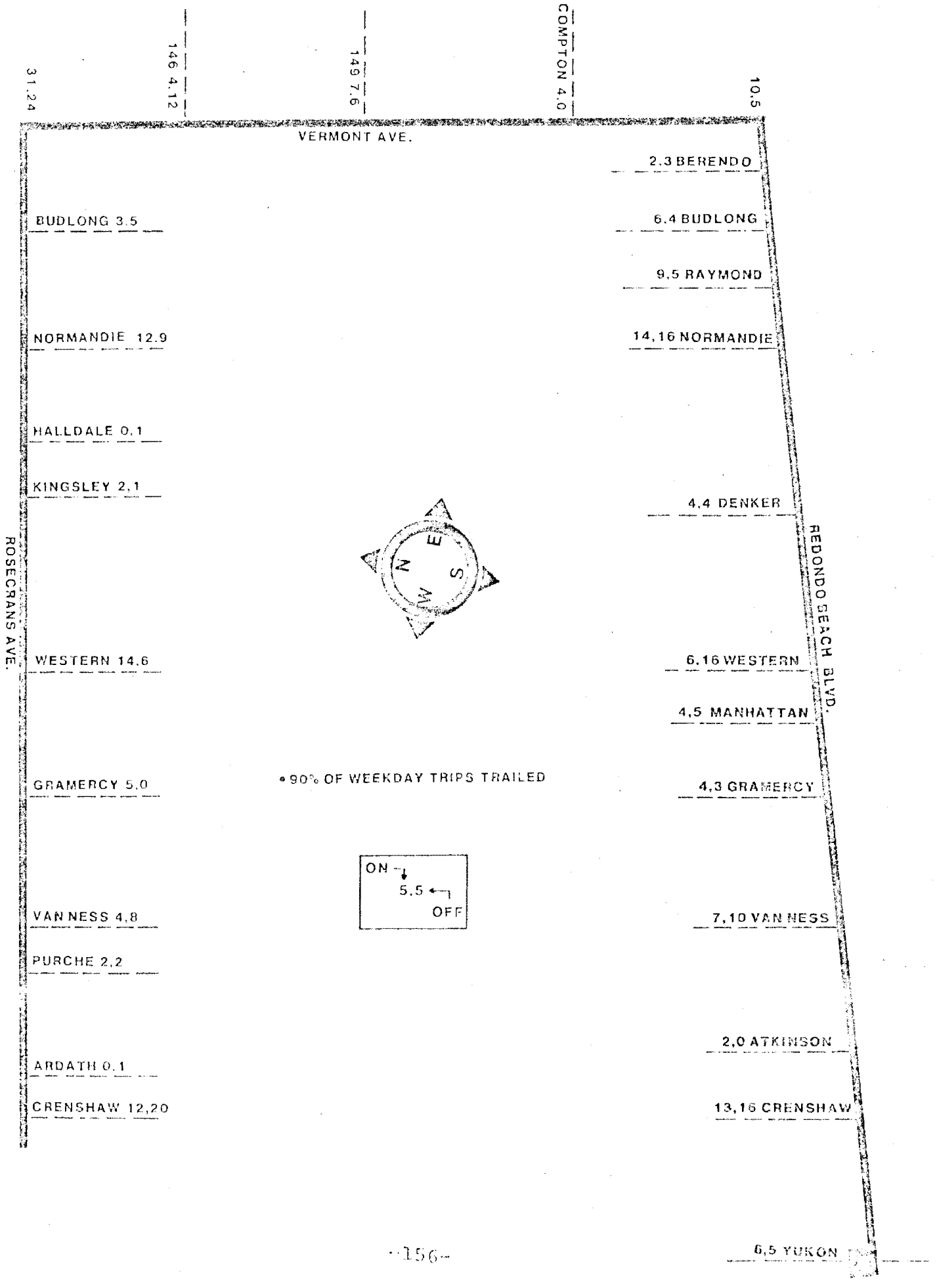
GARDENA RT. 3 SCHEMATIC
(CONT.)



GARDENA RT.5 SCHEMATIC*



*90% OF WEEKDAY TRIPS TRAILED

APPENDIX C

VERIFICATION OF SCRTD DATA

Verification of SCRTD Data

ATE team members conducted random on, off and passenger load checks of the SCRTD service during the week of January 29, 1979. Complete trail checks of the SCRTD's routes were not believed to be necessary because SCRTD maintains extensive on-off counts on an on-going basis. Each route is usually observed throughout its total duration of operation annually. SCRTD stores route performance data along with other system information on computer tape for easy and comprehensive use.

The purpose of ATE's passenger counts was to test the validity of the SCRTD counts and determine the need, if any, to generate new data.

In excess of 40 street intersections in the South Bay region were observed at selected times of the working day between 6:30 a.m. and 5:30 p.m. The observation points were either selected randomly or chosen specifically because they are locations of major transit activity (i.e., where several transit routes intersect).

The data collected by the ATE team was then compared with the most recent SCRTD weekday on-off counts available. Generally, only SCRTD data obtained within the past 12 months was utilized. Data collected before January 1978 was not considered to be characteristic of existing transit activity in South Bay.

When reviewing and comparing on-off counts, a number of uncontrollable variables regarding the data and its collection must be considered. First of all, transit ridership fluctuates daily and seasonably depending upon the collective decisions of individual riders. Weather conditions, holidays, vacation times, and personal needs and behavior affect transit useage. In particular, it was observed that ridership declines substantially during rainy days in the South Bay region. There were a number of uncontrollable circumstances (heavy rains on some days, difficulty in visual observation because of tinted windows on some SCRTD buses, morning fog, etc.) which, in some cases, caused potential variations in counts. These variances are noted.

Table C-1 presents ATE's and SCRTD's counts together for each route according to direction of travel, time sequence and location of the observed activity. For observation points where more than one time check was performed, the on's and off's are totalled to aid in the comparison.

Overall, the ATE and SCRTD counts are very similar. Some minor discrepancies can be noted but they are not considered to be significant given occasional variations in transit useage.

Based upon ATE's checks and general observations made during the field investigations, there is adequate indication that SCRTD's data is reasonably accurate and reliable. The route performance checks illustrate the pattern of activity in response to the SCRTD routes in South Bay.

The SCRTD passenger counts and on-off checks have, therefore, been used to evaluate the regional transit routes and assist in developing a complete system of service improvements.

TABLE C-1

Route	Time	Direc.	RTD Reported On	RTD Reported Off	RTD Reported Load	ATE Verification On	ATE Verification Off	ATE Verification Load	Observed Location
840	7:58A[1]	WB	NA	NA	NA	0	6	4	Rosecrans &
	8:33A[1]		0	0	11	0	2	3	Aviation
	Total		0	0		0	8		
	8:05A[1]	EB	0	1	1	1	0	5	
	8:40A[1]		0	0	6	0	3	1	
	Total		0	1		1	3		
10	6:25A	NB	0	0	0	0	0	0	Hawthorne &
	7:00A		0	0	0	1	0	2	Artesia
	7:30A		1	0	5	0	0	0	
	Total		1	0		1	0		
	6:39A	SB	0	2	1	0	5	6	
	7:09A		0	2	1	0	0	3	
	Total		0	4		0	5		
85	6:46A	NB	0	0	0	0	0	0	
	7:00A		NA	NA	NA	1	0	4	
	7:05A		NA	NA	NA	1	0	0	
	7:16A		1	0	1	2	0	3	
	Total		1	0		4	0		
	6:45A	SB	NA	NA	NA	0	1	2	
	7:01A		0	6	2	0	1	1	
	7:13A		NA	NA	NA	0	0	1	
	7:32A		0	0	1	0	3	0	
	Total		0	6		0	5		
5	6:47A	NB	1	0		0	0	45	
	7:15A		2	0	6	2	0	2	
	Total		3	0		2	0		
	6:47A	SB	0	2	9	0	0	0	
	6:52A		NA	NA	NA	0	1	2	
	7:10A		0	10	2	0	7	1	
	7:26A		0	8	12	0	8	4	
	Total		0	20		0	16		
861	8:22A[2]	NB	0	0	2	0	3	2	El Camino
	9:05A[2]		0	0	0	0	0	0	College, Man-
	9:45A[2]		0	2	1	1	0	2	hattan &
	Total		0	2		1	3		Crenshaw
	8:31A[2]	SB	0	3	9	1	0	3	
	9:14A[2]		1	1	12	0	0	5	
	Total		1	4		1	0		

1. Leave time at Rosecrans and Sepulveda
2. Leave time at Compton and Yukon

Route	Time	Direc.	RTD Recorded On	RTD Recorded Off	RTD Recorded Load	ATE Verification On	ATE Verification Off	ATE Verification Load	Observed Location
836	2:11P[1]	WB	5	3	22	0	1	5	Western &
	2:41P[1]		0	4	15	0	1	11	Imperial
	Total		5	7		0	2		
	2:38P[1]	EB	4	4	13	1	0	4	
	Total		4	4		1			
867	2:08P[2]	SB	NA	NA	NA	0	0	2	
	2:28P[2]	NB	NA	NA	NA	0	0	1	
	Total					0	0		
607	9:14A[3]	SB	NA	NA	NA	0	2	1	Sepulveda &
	9:44A[3]					0	0	5	Artesia
	10:14A[3]					0	0	1	
	Total					0	2		
	9:24A[3]	NB				2	0	9	
	9:54A[3]					0	0	2	
	10:24A[3]					0	0	2	
	Total					2	0		
873	9:15A[4]	SB	0	2	12	1	0	4	
	9:45A[4]	NB	2	0	12	0	0	13	
	Total		2	2		1	0		
846	9:39A[5]	EB	2	0	8	0	0	6	
	10:10A[5]	WB	0	0	10	1	0	7	
	Total		2	0		1	0		
869	10:25A[6]	NB[7]	0	0	1	0	0	20	Catalina &
	11:00A[6]	NB[8]	0	0	0	0	0	3	Palos Verdes D
	Total		0	0		0	0		
	11:41A[6]	SB	0	0	0	0	0	2	Hawthorne &
	12:41P[6]		0	0	0	0	0	0	Silver Spur
	Total		0	0		0	0		
871	10:59A	NB	2	0	7	5	0	5	Catalina & Ave. I

1. Leave time at Imperial and Crenshaw
2. Leave time at Inglewood and Century
3. Leave time at Sepulveda and Manhattan Beach
4. Leave time at PCH and Redondo Pier
5. Leave time at PCH and Pier Ave.
6. Leave time at Palos Verdes Dr. N. and W.
7. Via regular route
8. Via A route

Route	Time	Direc.	RTD Reported On	RTD Reported Off	RTD Reported Load	ATE Verification On	ATE Verification Off	ATE Verification Load	Observed Location
813	11:28A	NB	6	0	18	1	0	3	Hawthorne &
	11:58A		7	0	24	1	0	?	Silver Spur
	12:21P		2	0	9	2	0	2	Hawthorne & Granvia Alta
	12:28P		7	0	19	2	0	4	Hawthorne &
	Total		22	0		6	0		Silver Spur
	12:03P		0	0	1	1	0	4	
	12:08P		0	1	0	0	2	2	Hawthorne & Granvia Alta
	12:10P		0	0	0	0	1	1	Hawthorne & Eddinghill
	12:11P		0	0	0	0	1	0	Hawthorne &
	Total		0	1		1	4		Ridge
873	2:27P	NB	0	0	32	0	0	6	Hawthorne &
	2:35P	SB	3	2	27	3	0	12	PCH
813	2:35P	SB	2	3	33	0	0	3	
	2:37P	NB	6	0	12	0	3	1	
838	7:30A	EB	NA	NA	NA	2	0	7	El Segundo & Normandie
	2:06P	WB	NA	NA	NA	4	6	7	El Segundo & Hawthorne
5	2:07P	NB	0	4	16	6	0	18	Hawthorne & El Segundo
	2:09P	NB	0	0	14	8	1	25	Hawthorne &
	Total		0	4		14	1		120th
96	7:23A	SB	0	4	29	?	?	Standees	Normandie & El Segundo
	10:13A	SB	0	1	0	0	0	0	Normandie & Rosecrans
	10:28A	SB	0	1	2	0	1	4	Norm. & El Seg
	10:33A		0	4	0	0	4	0	Norm. & Rose.
	Total		0	5		0	5		
	10:20A	NB	1	0	1	0	0	0	Norm. & Rose.
	10:25A		1	0	2	1	0	1	Norm. & 139th
	10:26A		1	0	3	2	0	3	Norm. & 135th
	10:27A		0	0	3	0	0	3	Norm. & El Seg
	Total		3	0		3	0		
873	7:44A	NB	0	4	28	4	0	16	PCH & Las Colina
	8:28A		0	5	23	3	2	9	PCH & Hawthorn
	Total		0	9		7	2		

Route	Time	Direc.	RTD Recorded On	RTD Recorded Off	RTD Recorded Load	ATE Verification On	ATE Verification Off	ATE Verification Load	Observed Location
96	10:04A	NB	0	0	0	0	0	2	Normandie &
	10:24A		0	0	3	0	0	2	El Segundo
	10:44A		0	0	3	2	0	3	
	11:04A		0	0	4	0	0	0	
	Total		0	0		2	0		
	10:08A	SB	0	0	1	1	2	1	
	10:28A		0	1	2	0	2	0	
	10:48A		0	1	3	0	1	1	
	11:08A		0	0	5	0	0	2	
	Total		0	2		1	5		
836	12:53P[1]	EB	9	0	18	11	0	18	Western &
	1:08P[1]		8	1	25	8	1	12	Imperial
	1:23P[1]		8	4	23	4	2	11	
	1:38P[1]		8	2	17	3	2	7	
	Total		33	7		26	5		
	12:56P[1]	WB	5	3	21	4	2	12	
	1:11P[1]		5	3	22	0	3	4	
	1:26P[1]		3	0	26	3	1	9	
	1:41P[1]		0	2	3	3	1	8	
	Total		13	8		10	7		
84	1:01P	NB	NA	NA	NA	3	0	3	
	1:16P					1	0	2	
	1:31P					8	0	8	
	1:46P					4	0	4	
	Total					16	0		
	1:14P	SB	NA	NA	NA	0	0	?	
	1:26P					0	3	0	
	Total					0	3		
114	6:42A	NB	3	0	3	3	0	3	Compton &
	7:20A		4	4	9	10	4	17	Willowbrook
	Total		7	4		13	4		
	7:05A	SB	4	4	9	1	5	?	
	3:50P	NB	6	0	6	3	0	3	
	4:20P		8	2	10	2	0	?	
	4:50P		9	0	9	0	0	0	
	5:20P		4	1	5	0	0	?	
	Total		27	3		5	0		
	4:05P	SB	3	3	6	2	3	?	
	4:30P		0	2	0	0	2	0	
	5:05P		3	2	14	6	2	9	
	Total		6	7		8	7		

1. Leave time at Imperial and Crenshaw

WEEKDAY ON-OFF CHECKS

Route	Time	Direc.	RTD Recorded On	RTD Recorded Off	RTD Recorded Load	ATE Verification On	ATE Verification Off	ATE Verification Load	Observed Location
810	7:55A	SB	5	0	31	13	0	30	Rosecrans & Avalon
	8:25A		6	0	28	1	2	12	
	8:54A		2	1	13	1	0	12	
	Total		13	1		15	2		
	8:03A	NB	0	2	18	1	1	34	
	8:23A		0	1	23	1	2	14	
	8:43A		0	0	9	1	1	15	
	9:00A		1	2	18	0	1	10	
	Total		1	5		3	5		
840	8:28A[1]	EB	4	2	17	3	1	11	
	9:03A[1]		0	0	12	0	2	5	
	Total		4	2		3	3		
	8:10A[1]	WB	3	3	28	2	3	30	
	8:45A[1]		3	1	21	2	3	21	
	9:20A[1]		1	4	18	0	3	?	
	Total		7	8		4	9		
849	9:43A[2]	SB	0	0	8	2	1	6	PCH & Vermont
	9:49A[3]		0	1	8	0	0	6-10	
	10:13A[2]		0	0	3	0	0	8	
	10:19A[3]		1	0	5	0	2	7	
	10:43A[2]		0	1	5	0	0	3	
	Total		1	2		2	3		
	9:49A[3]	NB	0	0	15	1	0	4	PCH & Vermont
	9:55A[2]		0	0	12	0	0	4	Bixby & PCH
	10:19A[3]		0	0	15	0	3	6	PCH & Vermont
	10:25A[2]		0	0	14	0	1	9	Bixby & PCH
	Total		0	0		1	4		

1. Leave time at Rosecrans and Figueroa
2. Leave time at Harbor Jr. College
3. Leave time at PCH and Normandie

Route	Time	Direc.	RTD Recorded On	RTD Recorded Off	RTD Recorded Load	ATE Verification On	ATE Verification Off	ATE Verification Load	Observed Location
33	6:25A	NB	NA	NA	NA	1	3	12	
	6:37A					0	2	?	
	6:52A					7	2	21	
	7:04A					0	2	?	
	7:19A					0	1	10	
	7:33A					1	8	10	
	Total					9			
	6:38A	SB	NA	NA	NA	2	0	11	
	7:30A					15	0	20	
	7:36A					7	0	40	
	Total					24	0		
	4:05P	NB	NA	NA	NA	8	1	?	
	4:26P					9	6		
	4:59P					12	7		
	Total					29	14		
	3:53P	SB	NA	NA	NA	1	1		
	4:15P					4	2		
	4:30P					2	5		
	4:50P					8	4		
	5:10P					4	2		
	Total					19	14		
607	7:39A[1]	SB	NA	NA	NA	0	0	5	Rosecrans &
	8:14A[1]					3	0	10	Aviation
	8:44A[1]					0	0	2	
	Total					3	0		
	7:55A[1]	NB				0	1	4	
	8:25A[1]					0	0	8	
	Total					0	1		
869	7:49A[2]	SB	0	0	3	0	0	8	
	8:24A[2]		0	0	5	2	0	10	
	Total		0	0		2	0		
	7:42A[2]	NB	0	3	19	0	0	20	
	8:16A[2]		0	2	9	0	1	12	
	Total		0	5		0	1		

1. Leave time at Manhattan Beach and Sepulveda
2. Leave time at Aviation and PCH

Route	Time	Direc.	RTD Recorded On	RTD Recorded Off	RTD Recorded Load	ATE Verification On	ATE Verification Off	ATE Verification Load	Observed Location
114	9:25A	SB	0	1	3	0	1	4	Victoria & Cal State U.
842	10:30A	EB	3	1	7	1	0	6	Compton & Willowbrook
869	6:55A	NB	1	0	11	2	0	8	Prospect & PCH
813	7:03A[1]	NB	4	0	22	3-4	0	21	Hawthorne & Sepulveda
	7:05A	NB	8	0	35	3	0	24	Hawthorne & Emerald

1. Leave time from Hawthorne and Carson