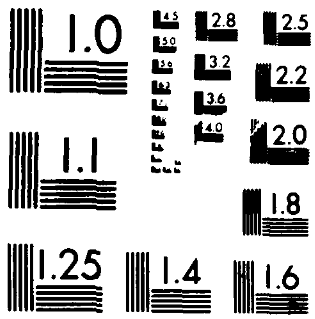
AD-A180 378 THE SHORELANDS: GENERAL POLICIES PLAN AMENDMENT 83-23 ZONE CHANGE APPLICATION 83-24 VOLUME 2 APPENDICES(U) COLE/MILLS ASSOCIATES MARTINEZ CA MAR 87 1/3

UNCLASSIFIED F/G 6/6 NL



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
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7. AUTHOR(s) Cole/Mills Associates Martinez, CA		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Army Corps of Engineers, San Francisco Dist. 211 Main Street San Francisco, CA 94105		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
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16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

Prepared in cooperation with the City of Hayward

Appendices bound in separate volume

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Environmental Impact
Urban Development
Wetlands
Salt Ponds
Horse Racetrack
Racetrack

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Joint State/Federal environmental impact document concerning a regulatory permit application by The Shorelands Corp. under Section 10 of the River and Harbor Act of 1899 and Section 404 of the Clean Water Act. The proposed project consists of the construction of a horse racetrack, industrial/office/commercial complex, and theme park on 736 acres of inactive salt ponds on the shoreline of the San Francisco Bay.

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

APPENDIX A

SUMMARY OF SITE ALTERNATIVES ANALYSIS

SUMMARY OF APPLICANT'S SITE ALTERNATIVES ANALYSIS

The Site Alternatives Analysis for the Hayward Shorelands, Amended February 1985, has been prepared by the applicant for the purpose of reviewing sites other than the Baumberg Tract for development of the proposed project. As explained in the project description, the Site Alternatives Analysis is required of the applicant by the United States Army Corps of Engineers and the City of Hayward under both CEQA and NEPA in addition this Environmental Impact Report/Environmental Impact Statement. This analysis of alternative sites must be reviewed by the Corps and the City before denial or approval of the Shorelands application to fill wetlands on the proposed project site.

The information provided in the Site Alternatives Analysis is based on the applicants review of 14 alternative sites in the East Bay Market Area. It is intended to demonstrate that there are no practicable alternative sites other than the Baumberg Tract available for development of the proposed project. To determine the suitability of alternative sites for development, each site was examined on the basis of the following elements: land use, size, location, presence or absence of wetlands, traffic & access, utilities, soils, slope, existing development, ownership and availability. In addition to examining these elements, the Corps requested (letter to applicant, January 30, 1985) that the following information be included in the Site Alternatives Analysis:

1. "A discussion of the costs of alternative sites as compared to the Baumberg Tract."

The applicant included a discussion of the various costs associated with development of the project. These costs are land costs, improvement costs (utilities, roadways etc.) and other cost related factors such as the proximity of a site to a geographic center of population. The applicant reported and stressed throughout this analysis the economic interdependency of the project components and the necessity of locating the project near a highly populated, centrally accessed area to ensure economic success.

2. "A discussion of alternative sites which have no wetlands."

The applicant examined several sites without wetlands which could potentially accomodate the proposed development. Those sites constrained by the presence of wetlands are indicated below.

3. "A discussion of the project components other than the racetrack such as the theme park, research and development complex, hotel, bank and restaurants which could be developed on alternative sites without the racetrack."

As previously mentioned, the applicant included a discussion of the interdependency of the various project components in this analysis. He maintains that these project components must be built in conjunction with the race track to ensure the economic success of the development.

4. "A discussion of the detailed land criteria used for siting racetracks."

The applicant has included a discussion of the factors involved in siting racetracks. These factors are primarily the size and shape of the site, its orientation relative to sun and wind, and its topography.

The following is a summary of the findings presented by the applicant in the Site Alternatives Analysis regarding the suitability of alternative sites to accomodate the proposed project. The information provided in this section is largely derived from the Site Alternatives Analysis and is only intended to provide an overview of the findings presented in it. For more detailed information regarding the alternative sites, the Site Alternatives Analysis itself should be referred to. Additionally, further review of each site is presented in this EIR/EIS. For a summary of these findings refer to Summary Section D at the beginning of this report.

Summary of Sites (information excerpted from Site Alternatives Analysis by the Shorelands Corporation)

1. Gillmor Property

This site is a 2100 acre group of parcels owned by Gary Gillmor Associates located on the west side of Highway 101 between Morgon Hill and Gilroy. The land cost per acre of this property is $16,000+. This property is currently zoned agricultural and would require no major improvements. The applicant rejected this site on the basis of the following development constraint:

- The location of this site and its distance from a bay area center of population would result in lowered attendance. Because the racetrack and theme park will be financially dependent on users, lowered attendance would reduce the economic success of the proposed project.

2. Garibaldi Site

The Garibaldi Site consists of 300+ acres approximately 1 mile south of the I- 80/Highway 680 junction on Highway 680. The land cost per acre is $174,240. The applicant has rejected this site on the basis of the following constraints:

- The site is currently zoned residential. Development of this project would not be consistent with this zoning. Additionally, if development of the proposed project were to occur on this site it would be necessary to annex it to the City of Fairfield. This annexation would require a change in the City of Fairfield General Plan.

- Like the Gillmor Property, this site is considered by the applicant to be economically infeasible because it is located at some distance from a geopraphic center of population. This distance could result in lowered attendance to on-site activities and therefore lowered profits.

- This site is considered physically unsuitable for development of a racetrack because of gusty wind patterns existing in the area.

- There is an absence of utilities.

3. Greenville Downs

The Greenville Downs site consists of 140+ acres of agricultural property just east of Livermore on North Front Road. The land cost per acre is $20,000. No major land improvements would be required and the land is currently zoned agricultural. This site has been rejected by the applicant on the basis of the following constraints:

- The amount of land available is insufficient for development of the proposed project. It would be neccessary to acquire additional property adjacent to the site to accomodate the development.

- The air quality in the Livermore Valley vicinity, where this site is located, is poor. A large scale development such as the proposed project could further reduce the air quality of the region and therefore would be discouraged.

- The sewer system for the Livermore/Dubin/Pleasanton area is reaching its capacity and would require large scale improvements to accomodate a large-scale development.

4. Hamilton Air Force Base

This site consists of approximately 380 acres of the former Hamilton Air Force Base on the east side of Highway 101. At the time this analysis was prepared, this land was to be sold at a public auction. The applicant rejected this site on the basis of the following constraints:

- The Land-Use Plan for Re-use of portions of Hamilton Air Force Base indicates that the preferred land uses for this site are primarily industrial and office-type, with residential and small-scale, local commercial as secondary uses. The proposed project is in conflict with these intended uses and therefore would require a general plan change.

- The distance of this site from the population center could hinder attendance to on-site activities.

5. Lundeberg Property

This alternative site is an approximately 250 acre portion of land in Vallejo known as the Northeast Quadrant. It is located on I-80 between Columbus Parkway and Redwood Parkway, adjacent to Blue Springs Park and across the freeway from the County Fairgrounds. The land cost per acre is $152,460 and the property is currently zoned commercial/residential. The applicant rejected this site on the basis of the following constraints:

- The site consists of hilly grasslands which would require extensive grading prior to development.

- The proposed development would be economically contrained by its distance from a geographic center of population.

6. Tosco Oil Refinery

This site is a 980 acre facility located just north of Concord in Contra Costa County. The land cost per acre is $100,000. The applicant has rejected this site on the basis of the following constraints:

- The property is currently zoned industrial.

- Portions of the site are wetlands.

- The site is adjacent to an oil refinery and is directly associated with its negative aesthetic effects and odors generated by the refinement process.

- The site is located in the Buchanan airfield flight path. Because of this all structures on the site would be subject to height restrictions. Even the minimum height of the grandstand would violate these restrictions.

7. Shell Oil Refinery

This site is in several parcel ownerships. The primary land unit is a 135 acre parcel adjacent to Highway 680. The other parcels are contiguous and lie to the east of the primary site. The land cost per acre was not available at the time this analysis was prepared. The applicant has rejected this site on the basis of the following constraints:

- The site would require extensive grading and land alteration prior to development.

- The site is downwind from an odorous sewer treatment plant.

- The site is not located in close proximity to a geographic center of population.

- Portions of the site are seasonal wetlands.

- There is limited access to the site.

8. Las Positas

This site consists of a 4400+ acre group of parcels in Livermore. The land cost per acre was unavailable at the time this report was prepared. The constraints associated with development of this particular site will be discussed in more detail towards the end of this section. However, in this analysis the applicant rejected this site on the basis of the following constraints:

- A development such as the proposed project is not politically supported on this particular site.

- As stated above, the air quality in the Livermore region is already poor, and large scale developments which could degrade the air quality further are presently discouraged.

- Also as mentioned above, the sewer system for the Livermore/Dublin/Pleasanton area is reaching its capacity and would require large-scale improvements to accomodate a development such as Shorelands.

9. Santa Rita

This site consists of 660 acres owned by the County of Alameda. Santa Rita prison, which is on the site, is scheduled to be abandoned and a new one is to be built adjacent to the northern boundary of the site. Construction of the proposed project would have to be phased with the construction of the new prison facility. The land is currently county owned. The applicant rejected this site on the basis of the following constraints:

- The proposed project would be located next to a prison.

- Coordination of the phasing involved with development of the new prison facility and construction of the proposed project would be difficult.

- Like the Greenville Downs and Las Positas sites located in the Livermore region, there are air quality and utility contraints.

10. Hercules

This site consists of a group of parcels located between San Pablo Bay and San Pablo Avenue, northwest of the I-80/Highway 4 junction. This property is the former site of the Hercules Gun Powder Company and has remained an industrial area since its abandonment. The land cost per acre ranges from $200,000 to $290,000. The applicant rejected this site on the basis of the following constraints:

- The site has already been planned for industrial development and infrastructure is already in place for the planned development.

- Portions of the site are considered wetlands.

- The site would require substantial grading.

- The site is economically constrained by its distance from a bay area population center.

11. North of 92

This site is a 580 acre combination of properties owned primarily by the City of Hayward, the Alameda County Flood Control District and a privately owned radio station. This land was formerly a dump site and land fill location. Currently it is used for sewer treatment and is a partially completed garbage fill area. The applicant has rejected this site on the basis of the following constraints:

- The proposed project would be in conflict with the preferred land use for the site, which is bay-related open space. Additionally, development on this site would not be supported by HASPA.

- Portions of the site are seasonal wetlands.

12. Bay Meadows

This site is the existing racing facility located in San Mateo. Development of this site would involve upgrading existing racing facilities. The land cost per acre is $700,000. The applicant has rejected this site on the basis of the following constraints:

- The 180 acre site is not large enough to both rebuild the track facilities and support the cost with other development.

13. Golden Gate Fields

Like Bay Meadows, this site is an existing horse racing facility. The land cost per acre is $570,000. Its development would involve upgrading existing facilities. The applicant has rejected this site on the basis of the following constraints:

- There are already plans for development of this site for industrial/commercial uses.

- The 200+ acre site is not large enough to upgrade the existing racing facility and develop the other components of the proposed project.

14. Southern Pacific Site

This site is a 480 acre site in Fremont which is owned by the the Southern Pacific Development Company. The property is located west of the Nimitz Freeway and is currently zoned for industrial use. Part of the parcel is occupied by an auto racing track which leases the property until 1989. At that time, the site will be abandoned. Future development plans for this property include an industrial park. The land cost per acre is $260,000. The applicant rejected this site on the basis of the following constraints:

- The industrial park planned to be developed on the site will utilize 220 acres, which would not leave enough acreage to develop the proposed project.

- The current industrial zoning is inconsistent with the proposed development.

Summary of Conclusions

The applicant reported that each of the alternative sites examined in this analysis is infeasible due to one or more development contraints. As mentioned above, these constraints are based on factors such as land use, location, size, traffic & access, utilities, soils, slope, existing development, presence or absence of wetland, and ownership and availability. After examining alternative sites the applicant maintains that the Baumberg Tract is the most practicable alternative for development of the proposed project. The advantages and constraints associated with this project site are the focus of this EIR/EIS and are examined in detail in this document.

Agency Review and Response

As mentioned above, this analysis was circulated to appropriate agencies for review prior to issuance of the necessary permits to begin fill operations of the wetlands on the Baumberg Tract. Upon reviewing this document, the United States Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) responded to the applicant in letters (Corps, 4/25/85; EPA, 4/1/85) indicating that the analysis lacked sufficient information to determine that the 14 alternative sites would not be practicable for development of the proposed project. At this time, the Corps and the EPA would neither approve nor deny the necessary permits, on the basis that there was insufficient information regarding the suitability of the alternative sites for development. In accordance with this, the Corps and the EPA requested that more information be supplied by the applicant.

In response to this request for additional information regarding the alternative sites, the applicant prepared a supplemental document entitled, Site Alternatives Analysis For the Hayward Shorelands, Response to Comments, June 1985. This document is intended to supplement the Site Alternatives Analysis For the Hayward Shorelands, February 1985 by clarifying issues raised by the Corps and the EPA and by providing information which one or both agencies felt was lacking in the first analysis.

Through written correspondence, both agencies specified several issues they consider to have been insufficiently addressed in the Site Alternatives Analysis. The Response to Comments is organized to directly respond to these issues stated in the Corps and EPA letters to the applicant. Of these issues, both the Corps and the EPA indicated that the Las Positas site and the Gillmor site were not adequately reviewed in the first analysis. They requested that the applicant provide more information to determine that these sites are not practicable alternatives to development of the Baumberg Tract. The requested information was to include:

- the cost per acre of the Las Positas site and;

- the cost effectiveness of a race track at the Gillmor and Las Positas sites if the population center were shifted to provide a more realistic appraisal of the numbers of people who would attend each site.

The applicant provided this information in the supplemental analysis. The Shorelands Corporation still maintains that both the Gillmor site and the Las Positas site are not suitable alternatives for development of the proposed project due to constraints associated with each. The applicant also reports in this analysis that neither site is available at this time.

Additionally, the Corps and the EPA requested that the applicant provide more information to support the claim that the various project components are economically interdependent. Both agencies suggested several variations of the project including moving portions of it to other sites and/or downscaling it to reduce or eliminate damage to wetlands on the proposed project site. The Corps also requested the following information related to this matter:

- demonstration of the necessity for physical adjacency of the race track and the commercial/industrial component, or that no alternative sites exist for the commercial/industrial components.

- costs, estimated net income, land siting criteria and other applicable data concerning the proposed commercial/industrial development in sufficient detail to determine the availability of alternative sites and the amount of development required to financially support the racetrack.

- revision of Exhibits 54 The Effect of Distance From a Major Theme Park On Market Penetration, and 57 Effect Of Distance On Income, to reflect the attendance characteristics of horse race tracks (as opposed to theme parks).

The applicant reviewed the issue of interdependency in the Response to Comments, including the points stated above, and further maintains that the racing facility is economically interdependent with adjacent land uses and that portions of the proposed project are "water-dependent". Additionally, the applicant stresses that it is necessary to have the race track located in the best possible relationship to Bay Area demographics.

Also requested in their letters was information regarding the following issues:

- findings of the waterfowl studies conducted on the Baumberg Tract.

- attendance characteristics of horse race tracks.

In conclusion, the applicant reports that none of the alternative sites are suitable for development of the proposed project because of the constraints identified in both the Site Alternatives Analysis and the Response to Comments. Both documents report that the Baumberg Tract is the only available site in the East Bay market area which can accomodate the proposed project. This conclusion is based on the following characteristics of the Baumberg Tract which, according to the applicant, contribute to its practicability as a race track site:

- The site is close to the Bay Area population center, providing the potential for optimum attendance rates (see Figure A.2).

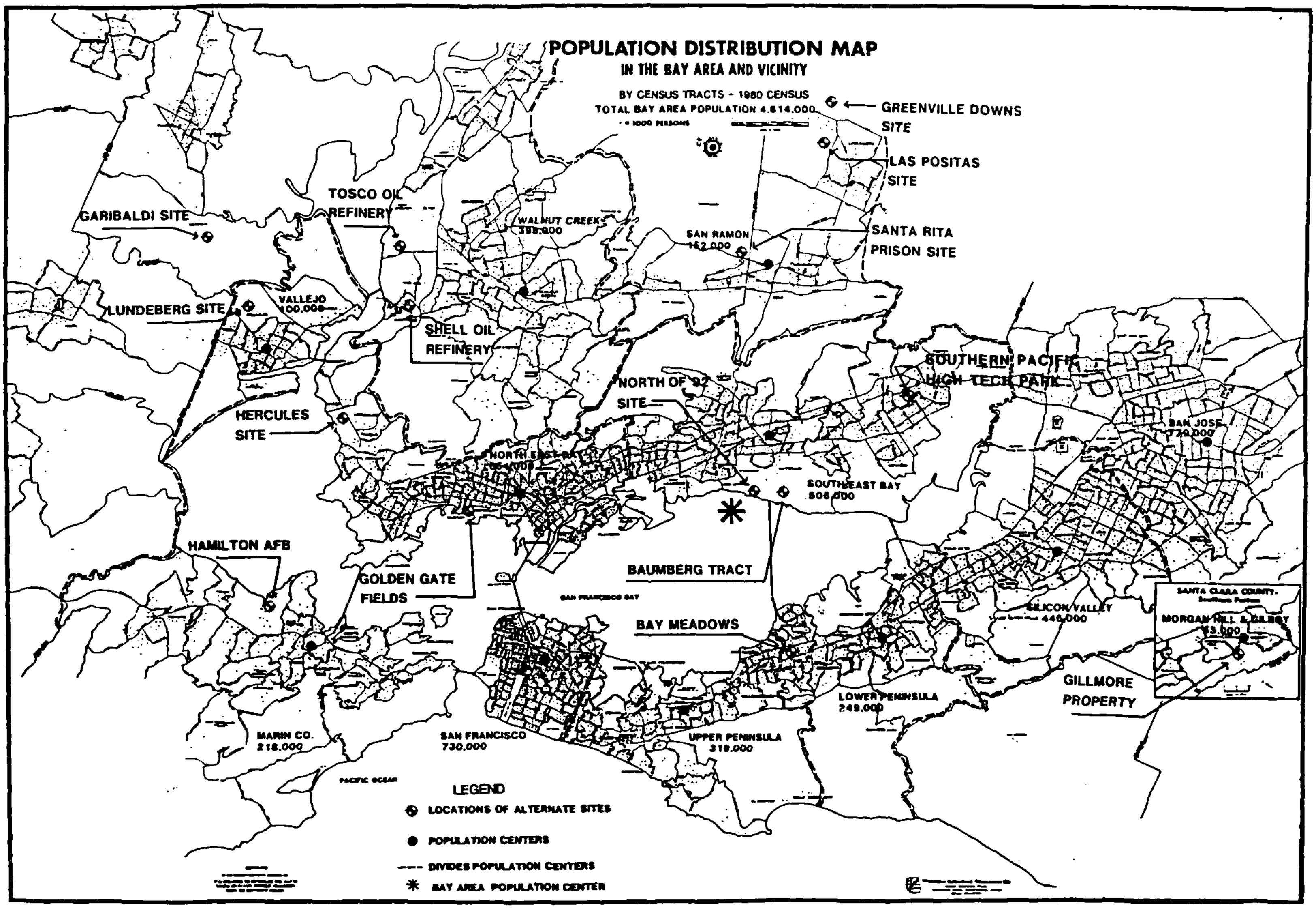

Figure B.1. Site Alternatives Map Prepared by Applicant

COLE/MILLS ASSOCIATES
Environmental Planning

- Its size allows for development of other ecomomically supportive and physically compatible uses.

- The habitat value of the site is marginal.

- Adjacent open acreage provides sufficient and appropriate space for extensive mitigation measures.

Agency Review of the "Response to Comments"

Upon review of the "Response to Comments" discussed above, the Corps indicated to the applicant (letter, October, 1985) that with regard to the race track component of the project "the documents you have submitted have demonstrated that there is no practicable alternative other than the site you have selected. Thus you have satisfied the requirements of 40 CFR 230.10(a)(3)." However, the Corps also indicated that the requirements of 40 CFR 230.10(a)(5), (b), (c) and (d), had not yet been satisfied.

Additionally, in a letter to the Applicant dated September 5, 1986 the Corps indicated that they "remain unconvinced that there is a necessity for physical adjacency of the business and light industrial park and the race track," despite the supplemental discussion provided in the "Response to Comments." However, the Corps did not request further resolution of this issue at this time, and indicated that "the issue will be considered a part of the overall review of factors of the public interest following completion of the EIR/EIS process."

APPENDIX B

SIGNALIZED INTERSECTION CAPACITY ANALYSIS

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: EDEN
JOB NO.: 5004-03	E-W STREET: 92
TM FILE: SHAMX.VOL	RECORD NO.: 1
GEO FILE: SHOR.GEO	CONDITION: EXISTING
DATE: 7-11-1986	PERIOD: AM

TOTAL VOLUMES:

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    |               275 --                        --   45
    |
  NORTH              60 -->   NO. PHASES: 4    <--   40

                     90 --                        --   10
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                         V                        V  E-W ST:
                                                      92
                               <--   ^   -->
                                |    |    |
                                40   35   10
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LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	115	0	0	0	0	0	0	1	615	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	95
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	85
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	425

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	40	+	615	+	425	+	10	=	1090

VOLUME TO CAPACITY RATIO (V/C) = .79
INTERSECTION LEVEL OF SERVICE (LOS) = C

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	CLAWITER
JOB NO.:	5004-03	E-W STREET:	92
TM FILE:	SHAMX.VOL	RECORD NO.:	2
GEO FILE:	SHOR.GEO	CONDITION:	EXISTING
DATE:	7-11-1986	PERIOD:	AM

TOTAL VOLUMES:

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   / \              |                          |
    |          30 --                           --  385
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  NORTH        15 -->     NO. PHASES: 4      <--  150

               45 --                           --  485
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                    V                          V  E-W ST:
                                                   92
                           <--    ^    -->
                              |   |    |
                             60  315   30
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LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	1	855
WB	1	385	0	0	0	0	0	0	1	635	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	405
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	90

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	60	+	855	+	30	+	635	=	1580

VOLUME TO CAPACITY RATIO (V/C) = 1.15
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	92 NORTH
TM FILE:	SHAMX.VOL	RECORD NO.:	3
GEO FILE:	SHOR.GEO	CONDITION:	EXISTING
DATE:	7-11-1986	PERIOD:	AM

TOTAL VOLUMES:

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                              |   |     |
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    / \                |                        |
     |           220 --                         --   15
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   NORTH          15 -->   NO. PHASES: 4     <--    20

                 150 --                         --   60
                       |                        |
                       V                        V  E-W ST:
                                                   92 NORTH
                            <--    .    -->
                              |    |     |
                             425  995   40
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LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	65	2	147	1	5	0	0	0	0	0	0	0	0
WB	1	15	0	0	0	0	0	0	1	80	0	0	0	0
NB	0	0	1	517	1	425	1	517	0	0	0	0	0	0
EB	1	150	1	15	0	0	0	0	1	220	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	425	+	147	+	220	+	80	=	872

VOLUME TO CAPACITY RATIO (V/C) = .63
INTERSECTION LEVEL OF SERVICE (LOS) = B

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

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==========================================================================
JOB NAME:  SHORELANDS                 N-S STREET: INDUSTRIAL
JOB NO.:  5004-03                     E-W STREET: 92 SOUTH
TM FILE:  SHAMX.VOL                   RECORD NO.:  4
GEO FILE: SHOR.GEO                    CONDITION:  EXISTING
DATE:      7-11-1986                  PERIOD:     AM
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TOTAL VOLUMES:

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                           180   380    55
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  / \                 !                        !
   !            90 --                          --   95
   !
 NORTH           0 -->    NO. PHASES: 4     <--    5

               135 --                          --   20
                      !                        !
                      V                        V  E-W ST:
                                                  92 SOUTH
                           <--    .     -->
                            !     !     !
                            40   960    5
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LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
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SB	1	180	2	190	1	55	0	0	0	0	0	0	0	0
WB	1	95	0	0	0	0	0	0	1	25	0	0	0	0
NB	1	5	2	480	1	40	0	0	0	0	0	0	0	0
EB	1	135	0	0	0	0	0	0	1	90	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	T		L			L		T		
VOLUME	480	+	55	+		90	+	25	=	650

VOLUME TO CAPACITY RATIO (V/C) = .47
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

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JOB NAME: SHORELANDS
JOB NO.: 5004-03
TM FILE: SHAMX.VOL
GEO FILE: SHOR.GEO
DATE: 7-11-1986

N-S STREET: INDUSTRIAL
E-W STREET: TENNYSON
RECORD NO.: 5
CONDITION: EXISTING
PERIOD: AM

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TOTAL VOLUMES:

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                                  <--   V    -->
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  / \                        |                     |
   |                      0 --                     -- 189
   |
 NORTH                    0 -->   NO. PHASES: 4   <--   0

                          0 --                     -- 113
                             |                     |
                             V                     V  E-W ST:
                                                      TENNYSON
                                  <--    ^    -->
                                   |     |     |
                                   0   776    27
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LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	216	1	92	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	1	75	1	113	0	0	0	0
NB	0	0	1	401	0	0	1	401	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	401	+	92	+	0	+	113	=	606

==

VOLUME TO CAPACITY RATIO (V/C) = .44
INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	BAUMBERG
TM FILE:	SHAMX.VOL	RECORD NO.:	6
GEO FILE:	SHOR.GEO	CONDITION:	EXISTING
DATE:	7-11-1986	PERIOD:	AM

===

TOTAL VOLUMES:

```
                              N-S ST: INDUSTRIAL

                                203  270    4
                                 |    |     |
                               <--    V     -->
                             ^                    ^
     / \                     |                    |
      |                 25 --                     --    2
      |
    NORTH               19 -->   NO. PHASES: 4   <--   72

                        38 --                     --    7
                             |                    |
                             V                    V  E-W ST:
                                                     BAUMBERG
                               <--    ^     -->
                                 |    |     |
                                417 1126    4
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	1	236	1	4	1	236	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	81
NB	0	0	1	565	1	417	1	565	0	0	0	0	0	0
EB	1	38	1	19	2	12	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	417	+	236	+	12	+	81	=	746

===

VOLUME TO CAPACITY RATIO (V/C) = .54

INTERSECTION LEVEL OF SERVICE (LOS) = A

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
=======================================================================
JOB NAME:  SHORELANDS                  N-S STREET: HESPERIAN
JOB NO.:  5004-03                      E-W STREET: INDUSTRIAL
TM FILE:  SHAMX.VOL                    RECORD NO.:  7
GEO FILE: SHOR.GEO                     CONDITION:  EXISTING
DATE:       7-11-1986                  PERIOD:     AM
=======================================================================
TOTAL VOLUMES:

                           N-S ST: HESPERIAN
                                   ---------------
                              45   325   220
                               |    |     |
                             <--    V     -->
                         ^                          ^
    / \                  |                          |
     |              5 --                            --  365
     |
   NORTH          190 -->    NO. PHASES: 8       <--  875
   -----
                  110 --                            --  160
                         |                          |
                         V                          V  E-W ST:
                                                       INDUSTRIAL
                                                       ---------------
                             <--     ^      -->
                               |     |      |
                             1375  1150     85

-----------------------------------------------------------------------
LANE GEOMETRIES AND VOLUMES:
```

	TURNING MOVEMENT													
	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	45	2	162	1	220	0	0	0	0	0	0	0	0
WB	0	0	1	620	1	160	1	620	0	0	0	0	0	0
NB	0	0	1	617	2	687	1	617	0	0	0	0	0	0
EB	1	110	2	95	1	5	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	687	+	162	+	5	+	620	=	1474

```
=======================================================================
VOLUME TO CAPACITY RATIO (V/C) = 1.07
INTERSECTION LEVEL OF SERVICE (LOS) = F
=======================================================================
```

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	17 WEST
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SHAMX.VOL	RECORD NO.:	8
GEO FILE:	SHOR.GEO	CONDITION:	EXISTING
DATE:	7-11-1986	PERIOD:	AM

==

TOTAL VOLUMES:

```
                          N-S ST: 17 WEST
                                  ____________________

                             365     0   320
                              |      |    |
                             <--     V    -->
                       ^                         ^
      / \              |                         |
       |         0   --                          --    0
       |
     NORTH      485  -->     NO. PHASES: 4    <--  1205

                 0   --                          --    0
                       |                         |
                       V                         V   E-W ST:
                                                     INDUSTRIAL
                             <--     ^    -->
                              |      |    |
                               0     0     0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	365	0	0	2	160	0	0	0	0	0	0	0	0
WB	0	0	2	602	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EB	1	0	2	242	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	0	+	160	+	0	+	602	=	762

==

VOLUME TO CAPACITY RATIO (V/C) = .55

INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

```
JOB NAME:  SHORELANDS               N-S STREET: 17 EAST
JOB NO.:   5004-03                  E-W STREET: INDUSTRIAL
TM FILE:   SHAMX.VOL                RECORD NO.:  9
GEO FILE:  SHOR.GEO                 CONDITION:  EXISTING
DATE:       7-11-1986               PERIOD:     AM
```

===

TOTAL VOLUMES:

```
                             N-S ST: 17 EAST

                                 0    0    0
                                 |    |    |
                               <--    V    -->
                            ^                   ^
  / \                       |                   |
   |                  40 --                     --  215
   |
 NORTH               755 -->   NO. PHASES: 4   <-- 1205

                       0 --                     --    0
                            |                   |
                            V                   V  E-W ST:
                                                   INDUSTRIAL
                               <--    ^    -->
                                 |    |    |
                                 0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	1	215	2	602	0	0	0	0	0	0	0	0	0	0
NB	1	0	0	0	2	0	0	0	0	0	0	0	0	0
EB	0	0	2	397	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

```
APPROACH    NB      SB            EB      WB         TOTAL
MOVEMENT     T       L             L       T
VOLUME       0   +   0     +      40   + 602    =     642
```

===

VOLUME TO CAPACITY RATIO (V/C) = .47
INTERSECTION LEVEL OF SERVICE (LOS) = A

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
=========================================================================
JOB NAME:  SHORELANDS                  N-S STREET: EDEN
JOB NO.:   5004-03                     E-W STREET:  92
TM FILE:   SHPMX.VOL                   RECORD NO.:  1
GEO FILE:  SHOR.GEO                    CONDITION:  EXISTING
DATE:        7-11-1986                 PERIOD:     PM
=========================================================================
TOTAL VOLUMES:

                            N-S ST: EDEN
                              
                               450   95  105
                                !    !    !
                               <--   V    -->
                          ^                     ^
      / \                 !                     !
       !            190 --                      --  110
       !
     NORTH           30 -->   NO. PHASES: 4   <--  210

                     15 --                      --    5
                          !                     !
                          V                     V  E-W ST:
                                                    92
                               <--   ^    -->
                                !    !    !
                               275  225   10

-------------------------------------------------------------------------
LANE GEOMETRIES AND VOLUMES:
```

	TURNING MOVEMENT													
	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	450	0	0	0	0	0	0	1	200	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	325
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	510
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	235

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	510	+	105	+	190	+	325	=	1130

```
=========================================================================
VOLUME TO CAPACITY RATIO (V/C) =  .82
INTERSECTION LEVEL OF SERVICE (LOS) = D
=========================================================================
```

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	CLAWITER
JOB NO.:	5004-03	E-W STREET:	92
TM FILE:	SHPMX.VOL	RECORD NO.:	2
GEO FILE:	SHOR.GEO	CONDITION:	EXISTING
DATE:	7-11-1986	PERIOD:	PM

TOTAL VOLUMES:

```
                         N-S ST: CLAWITER

                            80   25   90
                             |    |    |
                           <--    V    -->
                      ^                      ^
  / \                 |                      |
   |           365 --                        --  175
   |
 NORTH         470 -->   NO. PHASES: 4   <--  190

                30 --                        --   50
                      |                      |
                      V                      V  E-W ST:
                                                 92
                           <--    ^    -->
                             |    |    |
                            70   65   155
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	1	195
WB	1	175	0	0	0	0	0	0	1	240	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	290
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	865

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	290	+	90	+	865	+	50	=	1295

VOLUME TO CAPACITY RATIO (V/C) = .94
INTERSECTION LEVEL OF SERVICE (LOS) = E

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	92 NORTH
TM FILE:	SHPMX.VOL	RECORD NO.:	3
GEO FILE:	SHOR.GEO	CONDITION:	EXISTING
DATE:	7-11-1986	PERIOD:	PM

TOTAL VOLUMES:

```
                          N-S ST: INDUSTRIAL

                              70 1440    5
                               |   |     |
                            <--    V     -->
                         .                      .
  / \                    |                      |
   |             105 --                          --     5
   |
 NORTH            25 -->   NO. PHASES: 4     <--     5

                  80 --                          --    25
                         |                      |
                         V                      V  E-W ST:
                                                   92 NORTH
                            <--    .     -->
                             |     |     |
                            200   325    40
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	70	2	720	1	5	0	0	0	0	0	0	0	0
WB	1	5	0	0	0	0	0	0	1	30	0	0	0	0
NB	0	0	1	182	1	200	1	182	0	0	0	0	0	0
EB	1	80	1	25	0	0	0	0	1	105	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	200	+	720	+	105	+	30	=	1055

VOLUME TO CAPACITY RATIO (V/C) = .77
INTERSECTION LEVEL OF SERVICE (LOS) = C

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	92 SOUTH
TM FILE:	SHPMX.VOL	RECORD NO.:	4
GEO FILE:	SHOR.GEO	CONDITION:	EXISTING
DATE:	7-11-1986	PERIOD:	PM

TOTAL VOLUMES:

```
                              N-S ST: INDUSTRIAL

                                 325  845  115
                                  |    |    |
                                 <--   V   -->
                             ^                    ^
   / \                       |                    |
    |                    55 --                    --   55
    |
  NORTH                  40 -->   NO. PHASES: 4  <--    5

                        320 --                    --    5
                             |                    |
                             V                    V  E-W ST:
                                                     92 SOUTH

                                 <--    ^    -->
                                  |     |     |
                                  95   390   15
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	325	2	422	1	115	0	0	0	0	0	0	0	0
WB	1	55	0	0	0	0	0	0	1	10	0	0	0	0
NB	1	15	2	195	1	95	0	0	0	0	0	0	0	0
EB	1	320	0	0	0	0	0	0	1	95	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB				EB		WB		TOTAL
MOVEMENT	L		T				T		L		
VOLUME	95	+	422		+		95	+	5	=	617

VOLUME TO CAPACITY RATIO (V/C) = .45
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME: SHORELANDS
JOB NO.: 5004-03
TM FILE: SHPMX.VOL
GEO FILE: SHOR.GEO
DATE: 7-11-1986

N-S STREET: INDUSTRIAL
E-W STREET: TENNYSON
RECORD NO.: 5
CONDITION: EXISTING
PERIOD: PM

==

TOTAL VOLUMES:

```
                              N-S ST: INDUSTRIAL

                                 0 1170  445
                                 |   |    |
                              <--    V    -->
                            ^                    ^
     / \                    |                    |
      |              0 --                        --  100
      |
    NORTH            0 -->    NO. PHASES: 4   <--     0

                     0 --                        --   40
                            |                    |
                            V                    V  E-W ST:
                                                    TENNYSON
                              <--    ^    -->
                                 |   |    |
                                 0  425  150
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	585	1	445	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	1	35	1	40	0	0	0	0
NB	0	0	1	287	0	0	1	287	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	287	+	445	+	0	+	40	=	772

==

VOLUME TO CAPACITY RATIO (V/C) = .56
INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	BAUMBERG
TM FILE:	SHPMX.VOL	RECORD NO.:	6
GEO FILE:	SHOR.GEO	CONDITION:	EXISTING
DATE:	7-11-1986	PERIOD:	PM

==

TOTAL VOLUMES:

```
                              N-S ST: INDUSTRIAL

                                35 1105    5
                                 !   !     !
                               <--   V     -->
                            .                    .
   / \                      !                    !
    !              155 --                        --     5
    !
  NORTH            105 -->    NO. PHASES: 4    <--     20

                   445 --                        --     10
                            !                    !
                            V                    V   E-W ST:
                                                     BAUMBERG
                               <--    .    -->
                                 !    !     !
                                 75  415    15
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	1	570	1	5	1	570	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	35
NB	0	0	1	215	1	75	1	215	0	0	0	0	0	0
EB	1	445	1	105	2	77	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	75	+	570	+	105	+	10	=	760

==

VOLUME TO CAPACITY RATIO (V/C) = .55

INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

```
JOB NAME:  SHORELANDS                    N-S STREET: HESPERIAN
JOB NO.:   5004-03                       E-W STREET: INDUSTRIAL
TM FILE:   SHPMX.VOL                     RECORD NO.:  7
GEO FILE:  SHOR.GEO                      CONDITION:  EXISTING
DATE:       7-11-1986                    PERIOD:     PM
```

==

TOTAL VOLUMES:

```
                             N-S ST: HESPERIAN
                                     ---------------
                                15   680   210
                                 |    |     |
                               <--    V    -->
                          .                          .
    / \                   |                          |
     |              25 --                            --  250
     |
   NORTH           335 -->    NO. PHASES: 8        <--  165
   -----                                  -
                   835 --                            --   80
                          |                          |
                          V                          V  E-W ST:
                                                        INDUSTRIAL
                                                        ---------------
                               <--    .    -->
                                 |    |     |
                               180   535   170
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	15	2	340	1	210	0	0	0	0	0	0	0	0
WB	0	0	1	165	1	80	1	250	0	0	0	0	0	0
NB	0	0	1	352	2	90	1	352	0	0	0	0	0	0
EB	1	835	2	167	1	25	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	352	+	210	+	25	+	250	=	837

==

VOLUME TO CAPACITY RATIO (V/C) = .61

INTERSECTION LEVEL OF SERVICE (LOS) = B

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: 17 WEST
JOB NO.: 5004-03	E-W STREET: INDUSTRIAL
TM FILE: SHPMX.VOL	RECORD NO.: 8
GEO FILE: SHOR.GEO	CONDITION: EXISTING
DATE: 7-11-1986	PERIOD: PM

TOTAL VOLUMES:

```
                         N-S ST: 17 WEST

                            75    0   240
                             |    |    |
                            <--   V   -->
                      ^                          ^
  / \                 |                          |
   |               0 --                          --    0
   |
 NORTH           950 -->   NO. PHASES: 4   <--  390

                   0 --                          --    0
                      |                          |
                      V                          V  E-W ST:
                                                    INDUSTRIAL
                            <--   ^   -->
                             |    |    |
                             0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	75	0	0	2	120	0	0	0	0	0	0	0	0
WB	0	0	2	195	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EB	1	0	2	475	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	120	+	475	+	0	=	595

VOLUME TO CAPACITY RATIO (V/C) = .43
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	17 EAST
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SHPMX.VOL	RECORD NO.:	9
GEO FILE:	SHOR.GEO	CONDITION:	EXISTING
DATE:	7-11-1986	PERIOD:	PM

==

TOTAL VOLUMES:

```
                              N-S ST: 17 EAST
                              ________________
                               0    0    0
                               |    |    |
                             <--    V    -->
                        ^                      ^
    / \                 |                      |
     |           165  --                       --  230
     |
   NORTH         1025 -->   NO. PHASES: 4   <--  390

                    0 --                       --    0
                        |                      |
                        V                      V  E-W ST:
                                                  INDUSTRIAL
                             <--    ^    -->
                               |    |    |
                               0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	1	230	2	195	0	0	0	0	0	0	0	0	0	0
NB	1	0	0	0	2	0	0	0	0	0	0	0	0	0
EB	0	0	2	595	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	0	+	595	+	0	=	595

==

VOLUME TO CAPACITY RATIO (V/C) = .43

INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	EDEN
JOB NO.:	5004-03	E-W STREET:	92
TM FILE:	SH1EAM.VOL	RECORD NO.:	1
GEO FILE:	SHOR.GEO	CONDITION:	SH1EAM
DATE:	7-11-1986	PERIOD:	AM

TOTAL VOLUMES:

```
                           N-S ST: EDEN

                              115  390  225
                               |    |    |
                              <--   V    -->
                          .                       .
  / \                     |                       |
   |                275 --                        --   45
   |
 NORTH               60 -->   NO. PHASES: 4    <--   40

                     90 --                        --   10
                          |                       |
                          V                       V  E-W ST:
                                                      92
                              <--   .    -->
                               |    |    |
                               40   35   10
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	115	0	0	0	0	0	0	1	615	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	95
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	85
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	425

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	40	+	615	+	425	+	10	=	1090

VOLUME TO CAPACITY RATIO (V/C) = .79
INTERSECTION LEVEL OF SERVICE (LOS) = C

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	CLAWITER
JOB NO.:	5004-03	E-W STREET:	92
TM FILE:	SH1EAM.VOL	RECORD NO.:	2
GEO FILE:	SHOR.GEO	CONDITION:	SH1EAM
DATE:	7-11-1986	PERIOD:	AM

===

TOTAL VOLUMES:

```
                                N-S ST: CLAWITER

                                   20  470  365
                                    |   |    |
                                  <--   V    -->
                              .                      .
    / \                       |                      |
     |                   30 --                        -- 385
     |
   NORTH                 15 -->  NO. PHASES: 4   <-- 150

                         45 --                        -- 485
                              |                      |
                              V                      V  E-W ST:
                                                         92
                                  <--   .    -->
                                    |   |    |
                                   60  315   30
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	1	855
WB	1	385	0	0	0	0	0	0	1	635	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	405
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	90

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	60	+	855	+	30	+	635	=	1580

===

VOLUME TO CAPACITY RATIO (V/C) = 1.15

INTERSECTION LEVEL OF SERVICE (LOS) = F

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	92 NORTH
TM FILE:	SH1EAM.VOL	RECORD NO.:	3
GEO FILE:	SHOR.GEO	CONDITION:	SH1EAM
DATE:	7-11-1986	PERIOD:	AM

TOTAL VOLUMES:

```
                          N-S ST: INDUSTRIAL

                            65   337    5
                             |    |     |
                           <--    V    -->
                      ^                     ^
  / \                 |                     |
   |            220 --                      --   15
   |
 NORTH           15 -->   NO. PHASES: 4   <--    20

                150 --                      --   60
                      |                     |
                      V                     V  E-W ST:
                                               92 NORTH
                           <--    ^    -->
                             |    |     |
                           437  1021   40
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	65	2	168	1	5	0	0	0	0	0	0	0	0
WB	1	15	0	0	0	0	0	0	1	80	0	0	0	0
NB	0	0	1	530	1	437	1	530	0	0	0	0	0	0
EB	1	150	1	15	0	0	0	0	1	220	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	437	+	168	+	220	+	80	=	905

VOLUME TO CAPACITY RATIO (V/C) = .66
INTERSECTION LEVEL OF SERVICE (LOS) = B

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

```
JOB NAME:  SHORELANDS              N-S STREET: INDUSTRIAL
JOB NO.:   5004-03                 E-W STREET: 92 SOUTH
TM FILE:   SH1EAM.VOL              RECORD NO.:  4
GEO FILE:  SHOR.GEO                CONDITION:   SH1EAM
DATE:       7-11-1986              PERIOD:      AM
```

==

TOTAL VOLUMES:

```
                         N-S ST: INDUSTRIAL

                            180  573   55
                             |    |    |
                            <--   V    -->
                       .                     .
   / \                 |                     |
    |            90 --                       --   95
    |
  NORTH           0 -->   NO. PHASES: 4   <--      5

                135 --                       --   20
                       |                     |
                       V                     V  E-W ST:
                                                92 SOUTH
                            <--   .    -->
                             |    |    |
                             78 1016   5
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	180	2	286	1	55	0	0	0	0	0	0	0	0
WB	1	95	0	0	0	0	0	0	1	25	0	0	0	0
NB	1	5	2	508	1	78	0	0	0	0	0	0	0	0
EB	1	135	0	0	0	0	0	0	1	90	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	508	+	55	+	90	+	25	=	678

==

VOLUME TO CAPACITY RATIO (V/C) = .49
INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
JOB NAME:  SHORELANDS               N-S STREET: INDUSTRIAL
JOB NO.:   5004-03                  E-W STREET: TENNYSON
TM FILE:   SH1EAM.VOL               RECORD NO.:  5
GEO FILE:  SHOR.GEO                 CONDITION:  SH1EAM
DATE:       7-11-1986               PERIOD:     AM
```

TOTAL VOLUMES:

```
                          N-S ST: INDUSTRIAL

                               0   660    92
                               |    |     |
                             <--    V     -->
                       ^                        ^
   / \                 |                        |
    |              0 --                         --  189
    |
  NORTH            0 -->   NO. PHASES: 4   <--      0

                   0 --                         --  136
                       |                        |
                       V                        V  E-W ST:
                                                   TENNYSON
                             <--    ^     -->
                               |    |     |
                               0   870    39
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	330	1	92	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	1	81	1	136	0	0	0	0
NB	0	0	1	454	0	0	1	454	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	454	+	92	+	0	+	136	=	682

VOLUME TO CAPACITY RATIO (V/C) = .50
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	BAUMBERG
TM FILE:	SH1EAM.VOL	RECORD NO.:	6
GEO FILE:	SHOR.GEO	CONDITION:	SH1EAM
DATE:	7-11-1986	PERIOD:	AM

==

TOTAL VOLUMES:

```
                          N-S ST: INDUSTRIAL
                                  ------------------
                            454  270    4
                             |    |     |
                           <--    V     -->
                  .                            .
   / \            |                            |
    |        72 --                             --     2
    |
  NORTH      19 -->     NO. PHASES: 4     <--       72

            144 --                             --     7
                  |                            |
                  V                            V  E-W ST:
                                                  BAUMBERG
                           <--    .     -->
                            |     |     |
                           519  1126    4
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	1	270	1	4	1	454	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	81
NB	0	0	1	565	1	519	1	565	0	0	0	0	0	0
EB	1	144	1	19	2	36	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	L		T			L		T		
VOLUME	519	+	454	+		36	+	81	=	1090

==

VOLUME TO CAPACITY RATIO (V/C) = .79

INTERSECTION LEVEL OF SERVICE (LOS) = C

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: HESPERIAN
JOB NO.: 5004-03	E-W STREET: INDUSTRIAL
TM FILE: SH1EAM.VOL	RECORD NO.: 7
GEO FILE: SHOR.GEO	CONDITION: SH1EAM
DATE: 7-11-1986	PERIOD: AM

TOTAL VOLUMES:

```
                              N-S ST: HESPERIAN

                                  45   325   220
                                   |    |     |
                                 <--    V     -->

                            |                       |
  / \                       |                       |
   |                   5 --                         --  365
   |
  NORTH              203 -->    NO. PHASES: 8     <--  899

                     144 --                         --  160
                            |                       |
                            V                       V  E-W ST:
                                                       INDUSTRIAL

                                 <--          -->
                                   |    |     |
                                 1453 1150   85
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	45	2	162	1	220	0	0	0	0	0	0	0	0
WB	0	0	1	632	1	160	1	632	0	0	0	0	0	0
NB	0	0	1	617	2	726	1	617	0	0	0	0	0	0
EB	1	144	2	101	1	5	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	L		T			L		T		
VOLUME	726	+	162	+		5	+	632	=	1525

VOLUME TO CAPACITY RATIO (V/C) = 1.11
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	17 WEST
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH1EAM.VOL	RECORD NO.:	8
GEO FILE:	SHOR.GEO	CONDITION:	SH1EAM
DATE:	7-11-1986	PERIOD:	AM

===

TOTAL VOLUMES:

```
                              N-S ST: 17 WEST

                                365    0   320
                                 |     |    |
                              <--      V    -->
                           ^                        ^
   / \                     |                        |
    |                  0 --                         --    0
    |
  NORTH              498 -->   NO. PHASES: 4     <-- 1229

                       0 --                         --    0
                           |                        |
                           V                        V  E-W ST:
                                                       INDUSTRIAL
                              <--      ^    -->
                                 |     |    |
                                 0     0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	365	0	0	2	160	0	0	0	0	0	0	0	0
WB	0	0	2	614	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EB	1	0	2	249	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	0	+	160	+	0	+	614	=	774

===

VOLUME TO CAPACITY RATIO (V/C) = .56

INTERSECTION LEVEL OF SERVICE (LOS) = A

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME: SHORELANDS — N-S STREET: 17 EAST
JOB NO.: 5004-03 — E-W STREET: INDUSTRIAL
TM FILE: SH1EAM.VOL — RECORD NO.: 9
GEO FILE: SHOR.GEO — CONDITION: SH1EAM
DATE: 7-11-1986 — PERIOD: AM

===

TOTAL VOLUMES:

```
                          N-S ST: 17 EAST
                              0    0    0
                              |    |    |
                           <--     V    -->
                       ^                      ^
  / \                  |                      |
   |              40 --                        --  215
   |
 NORTH           768 -->   NO. PHASES: 4   <-- 1229

                   0 --                        --    0
                       |                      |
                       V                      V  E-W ST:
                                                 INDUSTRIAL
                           <--     ^    -->
                              |    |    |
                              0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	1	215	2	614	0	0	0	0	0	0	0	0	0	0
NB	1	0	0	0	2	0	0	0	0	0	0	0	0	0
EB	0	0	2	404	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	0	+	0	+	40	+	614	=	654

===

VOLUME TO CAPACITY RATIO (V/C) = .48
INTERSECTION LEVEL OF SERVICE (LOS) = A

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	BAUMBERG
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH1EAM.VOL	RECORD NO.:	11
GEO FILE:	SHOR.GEO	CONDITION:	SH1EAM
DATE:	7-11-1986	PERIOD:	AM

==

TOTAL VOLUMES:

```
                          N-S ST: BAUMBERG
                               0  159   0
                               |   |    |
                             <--   V    -->
                          .                   .
   / \                    |                   |
    |                   0 --                  --    0
    |
  NORTH                 0 -->   NO. PHASES: 5  <--   0

                        0 --                  --    0
                          |                   |
                          V                   V  E-W ST:
                                                 SHORELANDS
                             <--   .    -->
                               |   |    |
                               0  102   0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	0	2	79	1	0	0	0	0	0	0	0	0	0
WB	1	0	3	0	2	0	0	0	0	0	0	0	0	0
NB	1	0	2	51	2	0	0	0	0	0	0	0	0	0
EB	1	0	3	0	2	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	0	+	79	+	0	+	0	=	79

==

VOLUME TO CAPACITY RATIO (V/C) = .06

INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	EDEN
JOB NO.:	5004-03	E-W STREET:	92
TM FILE:	SH1EPM.VOL	RECORD NO.:	1
GEO FILE:	SHOR.GEO	CONDITION:	SH1EPM
DATE:	7-11-1986	PERIOD:	PM

TOTAL VOLUMES:

```
                            N-S ST: EDEN
                              450   95  105
                               |    |    |
                              <--   V   -->
                          ^                     ^
  / \                     |                     |
   |                190 --                      --  110
   |
 NORTH               30 -->   NO. PHASES: 4   <--  210

                     15 --                      --    5
                          |                     |
                          V                     V  E-W ST:
                                                    92
                              <--   ^   -->
                               |    |    |
                              275  225   10
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	450	0	0	0	0	0	0	1	200	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	325
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	510
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	235

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	510	+	105	+	190	+	325	=	1130

VOLUME TO CAPACITY RATIO (V/C) = .82
INTERSECTION LEVEL OF SERVICE (LOS) = D

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME: SHORELANDS
JOB NO.: 5004-03
TM FILE: SH1EPM.VOL
GEO FILE: SHOR.GEO
DATE: 7-11-1986

N-S STREET: CLAWITER
E-W STREET: 92
RECORD NO.: 2
CONDITION: SH1EPM
PERIOD: PM

==

TOTAL VOLUMES:

```
                              N-S ST: CLAWITER
                                                   
                                 80   25   90
                                  |    |    |
                                 <--   V   -->
                           .                      .
   / \                     |                      |
    |                 365 --                      --  175
    |
  NORTH               470 -->    NO. PHASES: 4   <--  190

                       30 --                      --   50
                           |                      |
                           V                      V  E-W ST:
                                                      92
                                 <--   .   -->
                                  |    |    |
                                 70   65   155
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	1	195
WB	1	175	0	0	0	0	0	0	1	240	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	290
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	865

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	290	+	90	+	865	+	50	=	1295

==

VOLUME TO CAPACITY RATIO (V/C) = .94
INTERSECTION LEVEL OF SERVICE (LOS) = E

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	92 NORTH
TM FILE:	SH1EPM.VOL	RECORD NO.:	3
GEO FILE:	SHOR.GEO	CONDITION:	SH1EPM
DATE:	7-11-1986	PERIOD:	PM

TOTAL VOLUMES:

```
                         N-S ST: INDUSTRIAL

                           70 1465    5
                            |   |     |
                          <--   V     -->
                     ^                          ^
   / \               |                          |
    |           105 --                          --     5
    |
  NORTH          25 -->    NO. PHASES: 4     <--      5

                 80 --                          --    25
                     |                          |
                     V                          V   E-W ST:
                                                    92 NORTH
                          <--     ^     -->
                            |     |     |
                           247   357    40
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	70	2	732	1	5	0	0	0	0	0	0	0	0
WB	1	5	0	0	0	0	0	0	1	30	0	0	0	0
NB	0	0	1	198	1	247	1	198	0	0	0	0	0	0
EB	1	80	1	25	0	0	0	0	1	105	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	247	+	732	+	105	+	30	=	1114

VOLUME TO CAPACITY RATIO (V/C) = .81
INTERSECTION LEVEL OF SERVICE (LOS) = D

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME: SHORELANDS
JOB NO.: 5004-03
TM FILE: SH1EPM.VOL
GEO FILE: SHOR.GEO
DATE: 7-11-1986

N-S STREET: INDUSTRIAL
E-W STREET: 92 SOUTH
RECORD NO.: 4
CONDITION: SH1EPM
PERIOD: PM

==

TOTAL VOLUMES:

```
                            N-S ST: INDUSTRIAL
                                    ----------
                              325   931   115
                               |     |     |
                             <--     V     -->
                          ^                       ^
   / \                    |                       |
    |              55   --                       --    55
    |
  NORTH            40   -->    NO. PHASES: 4    <--     5
  -----                                    -
                  320   --                       --     5
                          |                       |
                          V                       V  E-W ST:
                                                     92 SOUTH
                                                     --------
                             <--     ^     -->
                               |     |     |
                              257   469    15
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	325	2	465	1	115	0	0	0	0	0	0	0	0
WB	1	55	0	0	0	0	0	0	1	10	0	0	0	0
NB	1	15	2	234	1	257	0	0	0	0	0	0	0	0
EB	1	320	0	0	0	0	0	0	1	95	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	257	+	465	+	95	+	5	=	822

==

VOLUME TO CAPACITY RATIO (V/C) = .60
INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

```
JOB NAME:  SHORELANDS             N-S STREET: INDUSTRIAL
JOB NO.:   5004-03                E-W STREET: TENNYSON
TM FILE:   SH1EPM.VOL             RECORD NO.:  5
GEO FILE:  SHOR.GEO               CONDITION:  SH1EPM
DATE:       7-11-1986             PERIOD:     PM
```

===

TOTAL VOLUMES:

```
                         N-S ST: INDUSTRIAL

                            0 1272  445
                            |   |    |
                          <--   V    -->
                       .                    .
  / \                  |                    |
   |               0 --                      --  100
   |
  NORTH            0 -->   NO. PHASES: 4   <--     0

                   0 --                      --   52
                       |                    |
                       V                    V  E-W ST:
                                               TENNYSON
                          <--   ^    - >
                            |   |    |
                            0  666  176
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	636	1	445	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	1	38	1	52	0	0	0	0
NB	0	0	1	421	0	0	1	421	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	421	+	445	+	0	+	52	=	918

===

VOLUME TO CAPACITY RATIO (V/C) = .67
INTERSECTION LEVEL OF SERVICE (LOS) = B

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	BAUMBERG
TM FILE:	SH1EPM.VOL	RECORD NO.:	6
GEO FILE:	SHOR.GEO	CONDITION:	SH1EPM
DATE:	7-11-1986	PERIOD:	PM

==

TOTAL VOLUMES:

```
                              N-S ST: INDUSTRIAL

                               149 1105    5
                                !    !    !
                               <--   V    -->
                            .                   .
  / \                       !                   !
   !                  422 --                    --    5
   !
 NORTH                105 -->  NO. PHASES: 4  <--    20

                      558 --                    --   10
                            !                   !
                            V                   V  E-W ST:
                                                   BAUMBERG
                               <--   .    -->
                                !    !    !
                               121  415   15
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	1	627	1	5	1	627	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	35
NB	0	0	1	215	1	121	1	215	0	0	0	0	0	0
EB	1	558	1	105	2	211	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	121	+	627	+	211	+	35	=	994

==

VOLUME TO CAPACITY RATIO (V/C) = .72

INTERSECTION LEVEL OF SERVICE (LOS) = C

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	HESPERIAN
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH1EPM.VOL	RECORD NO.:	7
GEO FILE:	SHOR.GEO	CONDITION:	SH1EPM
DATE:	7-11-1986	PERIOD:	PM

TOTAL VOLUMES:

```
                          N-S ST: HESPERIAN

                             15   680   210
                              |    |     |
                           <--     V     -->
                    ^                            ^
   / \              |                            |
    |         25  --                             --  250
    |
  NORTH      365  -->   NO. PHASES: 8   <--  175

             918  --                             --   80
                    |                            |
                    V                            V  E-W ST:
                                                    INDUSTRIAL
                           <--     ^     -->
                             |     |     |
                            216   535   170
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	15	2	340	1	210	0	0	0	0	0	0	0	0
WB	0	0	1	175	1	80	1	250	0	0	0	0	0	0
NB	0	0	1	352	2	108	1	352	0	0	0	0	0	0
EB	1	918	2	182	1	25	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	352	+	210	+	25	+	250	=	837

VOLUME TO CAPACITY RATIO (V/C) = .61

INTERSECTION LEVEL OF SERVICE (LOS) = B

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	17 WEST
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH1EPM.VOL	RECORD NO.:	8
GEO FILE:	SHOR.GEO	CONDITION:	SH1EPM
DATE:	7-11-1986	PERIOD:	PM

TOTAL VOLUMES:

```
                              N-S ST: 17 WEST

                                 75     0   240
                                  |     |    |
                              <--       V     -->
                             .                      .
   / \                       |                      |
    |                  0 --                          --    0
    |
  NORTH              980 -->    NO. PHASES: 4    <--   400

                       0 --                          --    0
                             |                      |
                             V                      V  E-W ST:
                                                       INDUSTRIAL
                              <--       .     -->
                                 |      |    |
                                  0     0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	75	0	0	2	120	0	0	0	0	0	0	0	0
WB	0	0	2	200	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EB	1	0	2	490	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	120	+	490	+	0	=	610

VOLUME TO CAPACITY RATIO (V/C) = .44
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	17 EAST
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH1EPM.VOL	RECORD NO.:	9
GEO FILE:	SHOR.GEO	CONDITION:	SH1EPM
DATE:	7-11-1986	PERIOD:	PM

TOTAL VOLUMES:

```
                         N-S ST: 17 EAST
                             0    0    0
                             |    |    |
                          <--     V    -->
                      ^                        ^
   / \                |                        |
    |           165 --                         --  230
    |
  NORTH        1055 -->   NO. PHASES: 4   <--  400

                  0 --                         --    0
                      |                        |
                      V                        V  E-W ST:
                                                  INDUSTRIAL
                          <--     ^    -->
                             |    |    |
                             0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	1	230	2	200	0	0	0	0	0	0	0	0	0	0
NB	1	0	0	0	2	0	0	0	0	0	0	0	0	0
EB	0	0	2	610	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	0	+	610	+	0	=	610

VOLUME TO CAPACITY RATIO (V/C) = .44
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
=========================================================================
JOB NAME:  SHORELANDS                 N-S STREET: BAUMBERG
JOB NO.:  5004-03                     E-W STREET: SHORELANDS
TM FILE:  SH1EPM.VOL                  RECORD NO.: 11
GEO FILE: SHOR.GEO                    CONDITION:  SH1EPM
DATE:     7-11-1986                   PERIOD:     PM
=========================================================================
```

TOTAL VOLUMES:

```
                          N-S ST: BAUMBERG

                              0   62   0
                              |   |    |
                           <--    V    -->
                        ^                    ^
    / \                 |                    |
     |              0 --                     --    0
     |
   NORTH            0 -->   NO. PHASES: 5   <--    0

                    0 --                     --    0
                        |                    |
                        V                    V  E-W ST:
                                                SHORELANDS
                           <--    ^    -->
                             |    |    |
                              0   77   0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	0	2	31	1	0	0	0	0	0	0	0	0	0
WB	1	0	3	0	2	0	0	0	0	0	0	0	0	0
NB	1	0	2	38	2	0	0	0	0	0	0	0	0	0
EB	1	0	3	0	2	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	38	+	0	+	0	+	0	=	38

```
=========================================================================
VOLUME TO CAPACITY RATIO (V/C) =  .03
INTERSECTION LEVEL OF SERVICE (LOS) = A
=========================================================================
```

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	EDEN
JOB NO.:	5004-03	E-W STREET:	92
TM FILE:	SH2EAM.VOL	RECORD NO.:	1
GEO FILE:	SHOR.GEO	CONDITION:	SH2EAM
DATE:	7-11-1986	PERIOD:	AM

TOTAL VOLUMES:

```
                         N-S ST: EDEN

                           115   603   225
                            |     |     |
                           <--    V    -->
                     ^                        ^
   / \               |                        |
    |          275 --                         --   45
    |
  NORTH         60 -->   NO. PHASES: 4    <--     40

                90 --                         --   10
                     |                        |
                     V                        V  E-W ST:
                                                  92
                           <--    ^    -->
                            |     |     |
                            88   116    10
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	115	0	0	0	0	0	0	1	828	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	95
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	214
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	425

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	88	+	828	+	425	+	10	=	1351

VOLUME TO CAPACITY RATIO (V/C) = .98
INTERSECTION LEVEL OF SERVICE (LOS) = E

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	CLAWITER
JOB NO.:	5004-03	E-W STREET:	92
TM FILE:	SH2EAM.VOL	RECORD NO.:	2
GEO FILE:	SHOR.GEO	CONDITION:	SH2EAM
DATE:	7-11-1986	PERIOD:	AM

===

TOTAL VOLUMES:

```
                                 N-S ST: CLAWITER

                                     20  545  365
                                      |   |    |
                                   <--    V    -->
                                 ^                     ^
      / \                        |                     |
       |                  30   --                      --  385
       |
     NORTH                15   -->  NO. PHASES: 4   <--    150

                          45   --                      --  623
                                 |                     |
                                 V                     V  E-W ST:
                                                           92
                                   <--    ^    -->
                                      |   |    |
                                     60  360   66
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	1	930
WB	1	385	0	0	0	0	0	0	1	773	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	486
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	90

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	60	+	930	+	30	+	773	=	1793

===

VOLUME TO CAPACITY RATIO (V/C) = 1.30

INTERSECTION LEVEL OF SERVICE (LOS) = F

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

```
JOB NAME:  SHORELANDS                N-S STREET: INDUSTRIAL
JOB NO.:   5004-03                   E-W STREET: 92 NORTH
TM FILE:   SH2EAM.VOL                RECORD NO.:  3
GEO FILE:  SHOR.GEO                  CONDITION:  SH2EAM
DATE:       7-11-1986                PERIOD:     AM
```

===

TOTAL VOLUMES:

```
                       N-S ST: INDUSTRIAL

                           65  295   5
                            |   |    |
                          <--   V    -->
                     ^                    ^
  / \                |                    |
   |          220  --                     --   15
   |
 NORTH         15  -->   NO. PHASES: 4   <--   20

              150  --                     --   60
                     |                    |
                     V                    V  E-W ST:
                                             92 NORTH
                          <--   ^    -->
                            |   |    |
                           425  995  40
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	65	2	147	1	5	0	0	0	0	0	0	0	0
WB	1	15	0	0	0	0	0	0	1	80	0	0	0	0
NB	0	0	1	517	1	425	1	517	0	0	0	0	0	0
EB	1	150	1	15	0	0	0	0	1	220	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	L		T			L		T		
VOLUME	425	+	147	+		220	+	80	=	872

===

VOLUME TO CAPACITY RATIO (V/C) = .63

INTERSECTION LEVEL OF SERVICE (LOS) = B

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
==========================================================================
JOB NAME:  SHORELANDS                  N-S STREET: INDUSTRIAL
JOB NO.:   5004-03                     E-W STREET: 92 SOUTH
TM FILE:   SH2EAM.VOL                  RECORD NO.:  4
GEO FILE:  SHOR.GEO                    CONDITION:   SH2EAM
DATE:       7-11-1986                  PERIOD:      AM
==========================================================================
TOTAL VOLUMES:

                          N-S ST: INDUSTRIAL

                               180  533   55
                                |    |    |
                               <--   V    -->
                         ^                       ^
    / \                  |                       |
     |              90 --                        --    95
     |
   NORTH             0 -->    NO. PHASES: 4    <--     5

                   135 --                        --    20
                         |                       |
                         V                       V  E-W ST:
                                                    92 SOUTH
                               <--   ^    -->
                                |    |    |
                               133  960    5
```

```
--------------------------------------------------------------------------
LANE GEOMETRIES AND VOLUMES:
```

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	180	2	266	1	55	0	0	0	0	0	0	0	0
WB	1	95	0	0	0	0	0	0	1	25	0	0	0	0
NB	1	5	2	480	1	133	0	0	0	0	0	0	0	0
EB	1	135	0	0	0	0	0	0	1	90	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	480	+	55	+	90	+	25	=	650

```
==========================================================================
VOLUME TO CAPACITY RATIO (V/C) =   .47
INTERSECTION LEVEL OF SERVICE (LOS) = A
==========================================================================
```

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	TENNYSON
TM FILE:	SH2EAM.VOL	RECORD NO.:	5
GEO FILE:	SHOR.GEO	CONDITION:	SH2EAM
DATE:	7-11-1986	PERIOD:	AM

TOTAL VOLUMES:

```
                         N-S ST: INDUSTRIAL

                              0   585   92
                              |    |    |
                            <--    V    -->
                     ^                          ^
   / \               |                          |
    |             0 --                          -- 189
    |
  NORTH           0 -->    NO. PHASES: 4    <--     0

                  0 --                          -- 155
                     |                          |
                     V                          V  E-W ST:
                                                   TENNYSON
                            <--    ^    -->
                              |    |    |
                              0   869   50
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	292	1	92	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	1	86	1	155	0	0	0	0
NB	0	0	1	459	0	0	1	459	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	459	+	92	+	0	+	155	=	706

VOLUME TO CAPACITY RATIO (V/C) = .51
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
=========================================================================
JOB NAME:  SHORELANDS               N-S STREET: INDUSTRIAL
JOB NO.:  5004-03                   E-W STREET: BAUMBERG
TM FILE:  SH2EAM.VOL                RECORD NO.:  6
GEO FILE: SHOR.GEO                  CONDITION:  SH2EAM
DATE:      7-11-1986                PERIOD:     AM
=========================================================================
TOTAL VOLUMES:

                            N-S ST: INDUSTRIAL

                               398  270    4
                                |    |     |
                              <--    V     -->
                          ^                     ^
    / \                   |                     |
     |               141 --                     --    2
     |
   NORTH              19 -->   NO. PHASES: 4  <--    72

                      38 --                     --    7
                          |                     |
                          V                     V  E-W ST:
                                                   BAUMBERG
                              <--     ^     -->
                                |     |     |
                               417  1126    4
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	1	270	1	4	1	398	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	81
NB	0	0	1	565	1	417	1	565	0	0	0	0	0	0
EB	1	38	1	19	2	70	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	417	+	398	+	70	+	81	=	966

===

VOLUME TO CAPACITY RATIO (V/C) = .70

INTERSECTION LEVEL OF SERVICE (LOS) = C

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	HESPERIAN
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH2EAM.VOL	RECORD NO.:	7
GEO FILE:	SHOR.GEO	CONDITION:	SH2EAM
DATE:	7-11-1986	PERIOD:	AM

TOTAL VOLUMES:

```
                             N-S ST: HESPERIAN

                                45  325  220
                                 |   |    |
                              <--    V    -->
                           ^                    ^
    / \                    |                    |
     |                 5 --                      --  365
     |
   NORTH             218 -->  NO. PHASES: 8   <--  922

                     188 --                      --  160
                           |                    |
                           V                    V  E-W ST:
                                                   INDUSTRIAL
                              <--    ^    -->
                               |     |    |
                              1525 1150   85
```

LANE GEOMETRIES AND VOLUMES:

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	45	2	162	1	220	0	0	0	0	0	0	0	0
WB	0	0	1	643	1	160	1	643	0	0	0	0	0	0
NB	0	0	1	617	2	762	1	617	0	0	0	0	0	0
EB	1	188	2	109	1	5	0	0	0	0	0	0	0	0

(TURNING MOVEMENT)

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	762	+	162	+	5	+	643	=	1572

VOLUME TO CAPACITY RATIO (V/C) = 1.14
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: 17 WEST
JOB NO.: 5004-03	E-W STREET: INDUSTRIAL
TM FILE: SH2EAM.VOL	RECORD NO.: 8
GEO FILE: SHOR.GEO	CONDITION: SH2EAM
DATE: 7-11-1986	PERIOD: AM

TOTAL VOLUMES:

```
                         N-S ST: 17 WEST
                          365    0   320
                            |    |    |
                          <--    V    -->
                 ^                              ^
   / \           |                              |
    |       0  --                               --     0
    |
  NORTH   513  -->    NO. PHASES: 4        <--  1252

            0  --                               --     0
                 |                              |
                 V                              V   E-W ST:
                                                    INDUSTRIAL
                          <--    ^    -->
                            |    |    |
                             0   0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	365	0	0	2	160	0	0	0	0	0	0	0	0
WB	0	0	2	626	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EB	1	0	2	256	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	0	+	160	+	0	+	626	=	786

VOLUME TO CAPACITY RATIO (V/C) = .57
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
JOB NAME:  SHORELANDS                N-S STREET: 17 EAST
JOB NO.:  5004-03                    E-W STREET: INDUSTRIAL
TM FILE:  SH2EAM.VOL                 RECORD NO.:  9
GEO FILE: SHOR.GEO                   CONDITION:  SH2EAM
DATE:      7-11-1986                 PERIOD:     AM
```

TOTAL VOLUMES:

```
                             N-S ST: 17 EAST

                                   0    0    0
                                   |    |    |
                                 <--    V    -->
                            ^                          ^
   / \                      |                          |
    |                 40 ---                           --  215
    |
  NORTH              783 -->    NO. PHASES: 4     <-- 1252

                       0 --                            --    0
                            |                          |
                            V                          V  E-W ST:
                                                          INDUSTRIAL
                                 <--    ^    -->
                                   |    |    |
                                   0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	1	215	2	626	0	0	0	0	0	0	0	0	0	0
NB	1	0	0	0	2	0	0	0	0	0	0	0	0	0
EB	0	0	2	411	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	0	+	0	+	40	+	626	=	666

VOLUME TO CAPACITY RATIO (V/C) = .48
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	SHROELANDS
TM FILE:	SH2EAM.VOL	RECORD NO.:	10
GEO FILE:	SHOR.GEO	CONDITION:	SH2EAM
DATE:	7-16-1986	PERIOD:	AM

==

TOTAL VOLUMES:

```
                          N-S ST: INDUSTRIAL

                               0    0    0
                               |    |    |
                              <--   V   -->
                         .                    .
   / \                   |                    |
    |                0 --                     --    0
    |
  NORTH              0 -->   NO. PHASES: 5   <--    0

                   110 --                     --    0
                         |                    |
                         V                    V  E-W ST:
                                                 SHROELANDS
                              <--   .   -->
                               |    |    |
                              197   0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	C	3	0	0	0	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NB	0	0	3	0	2	98	0	0	0	0	0	0	0	0
EB	2	55	0	0	2	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	98	+	0	+	0	+	0	=	98

==

VOLUME TO CAPACITY RATIO (V/C) = .07

INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME: SHORELANDS
JOB NO.: 5004-03
TM FILE: SH2EAM.VOL
GEO FILE: SHOR.GEO
DATE: 7-11-1986

N-S STREET: BAUMBERG
E-W STREET: SHORELANDS
RECORD NO.: 11
CONDITION: SH2EAM
PERIOD: AM

==

TOTAL VOLUMES:

```
                         N-S ST: BAUMBERG
                              0    81    0
                              |    |     |
                           <--     V     -->
                       ^                         ^
  / \                  |                         |
   |               45 --                         --   14
   |
 NORTH              0 -->    NO. PHASES: 5    <--      0

                   17 --                         --    0
                       |                         |
                       V                         V  E-W ST:
                                                    SHORELANDS
                           <--     ^     -->
                             |     |     |
                             23    52    24
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	0	2	40	1	0	0	0	0	0	0	0	0	0
WB	1	14	3	0	2	0	0	0	0	0	0	0	0	0
NB	1	24	2	26	2	11	0	0	0	0	0	0	0	0
EB	1	17	3	0	2	22	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	11	+	40	+	22	+	0	=	73

==

VOLUME TO CAPACITY RATIO (V/C) = .05
INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	ENTRANCE
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH2EAM.VOL	RECORD NO.:	12
GEO FILE:	SHOR.GEO	CONDITION:	SH2EAM
DATE:	7-11-1986	PERIOD:	AM

TOTAL VOLUMES:

```
                         N-S ST: ENTRANCE

                             0    0    0
                             |    |    |
                           <--    V    -->
                    ^                          ^
    / \             |                          |
     |         0 --                            --    0
     |
   NORTH      92 -->    NO. PHASES: 5    <--   118

               0 --                            --    0
                    |                          |
                    V                          V  E-W ST:
                                                  SHORELANDS
                           <--    ^    -->
                             |    |    |
                             0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	0	0	3	39	2	0	0	0	0	0	0	0	0	0
NB	2	0	0	0	2	0	0	0	0	0	0	0	0	0
EB	1	0	3	30	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	T		L			L		T		
VOLUME	0	+	0	+		0	+	39	=	39

VOLUME TO CAPACITY RATIO (V/C) = .03
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	EDEN LANDING
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH2EAM.VOL	RECORD NO.:	13
GEO FILE:	SHOR.GEO	CONDITION:	SH2EAM
DATE:	7-11-1986	PERIOD:	AM

===

TOTAL VOLUMES:

```
                              N-S ST: EDEN LANDING

                                   0    0  213
                                   |    |   |
                                 <--    V   -->
                             .                     .
   / \                       |                     |
    |                    0 --                      --  129
    |
  NORTH                 75 -->   NO. PHASES: 5   <--     0

                         0 --                      --    0
                             |                     |
                             V                     V  E-W ST:
                                                      SHORELANDS
                                 <--    .   -->
                                   |    |   |
                                   0    0   0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	0	2	0	2	106	0	0	0	0	0	0	0	0
WB	1	129	3	0	1	0	0	0	0	0	0	0	0	0
NB	1	0	1	0	2	0	0	0	0	0	0	0	0	0
EB	1	0	3	25	1	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	106	+	25	+	0	=	131

===

VOLUME TO CAPACITY RATIO (V/C) = .10

INTERSECTION LEVEL OF SERVICE (LOS) = A

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: EDEN
JOB NO.: 5004-03	E-W STREET: 92
TM FILE: SH2EPM.VOL	RECORD NO.: 1
GEO FILE: SHOR.GEO	CONDITION: SH2EPM
DATE: 7-14-1986	PERIOD: PM

TOTAL VOLUMES:

```
                                N-S ST: EDEN
                                             
                                 450  206  105
                                  |    |    |
                                 <--   V   -->
                               ^                    ^
                               |                    |
 / \               190 --                           --  110
  |
  |
 NORTH              30 -->     NO. PHASES: 4      <--  210

                    15 --                           --    5
                               |                    |
                               V                    V  E-W ST:
                                                        92
                                 <--   ^   -->
                                  |    |    |
                                 392  380   10
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	450	0	0	0	0	0	0	1	311	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	325
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	782
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	235

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	782	+	105	+	190	+	325	=	1402

VOLUME TO CAPACITY RATIO (V/C) = 1.02
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	CLAWITER
JOB NO.:	5004-03	E-W STREET:	92
TM FILE:	SH2EPM.VOL	RECORD NO.:	2
GEO FILE:	SHOR.GEO	CONDITION:	SH2EPM
DATE:	7-14-1986	PERIOD:	PM

===

TOTAL VOLUMES:

```
                         N-S ST: CLAWITER

                            80   70   90
                             |    |    |
                            <--   V   -->
                      .                      .
   / \                |                      |
    |          365 --                        -- 175
    |
  NORTH        470 -->   NO. PHASES: 4   <-- 190

                30 --                        -- 116
                      |                      |
                      V                      V  E-W ST:
                                                 92
                            <--   .   -->
                             |    |    |
                            70   145  230
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	1	240
WB	1	175	0	0	0	0	0	0	1	306	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	445
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	865

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	445	+	90	+	865	+	116	=	1516

===

VOLUME TO CAPACITY RATIO (V/C) = 1.10

INTERSECTION LEVEL OF SERVICE (LOS) = F

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	92 NORTH
TM FILE:	SH2EPM.VOL	RECORD NO.:	3
GEO FILE:	SHOR.GEO	CONDITION:	SH2EPM
DATE:	7-14-1986	PERIOD:	PM

===

TOTAL VOLUMES:

```
                        N-S ST: INDUSTRIAL

                          70 1440   5
                           |   |    |
                          <--  V   -->
                   ^                        ^
                   |                        |
  / \         105 --                        --    5
   |
   |
 NORTH         25 -->   NO. PHASES: 4  <--     5

               80 --                        --   25
                   |                        |
                   V                        V  E-W ST:
                                               92 NORTH
                          <--  ^   -->
                           |   |    |
                          200 325   40
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	70	2	720	1	5	0	0	0	0	0	0	0	0
WB	1	5	0	0	0	0	0	0	1	30	0	0	0	0
NB	0	0	1	182	1	200	1	182	0	0	0	0	0	0
EB	1	80	1	25	0	0	0	0	1	105	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	200	+	720	+	105	+	30	=	1055

===

VOLUME TO CAPACITY RATIO (V/C) = .77

INTERSECTION LEVEL OF SERVICE (LOS) = C

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
============================================================================
JOB NAME:  SHORELANDS                N-S STREET: INDUSTRIAL
JOB NO.:   5004-03                   E-W STREET: 92 SOUTH
TM FILE:   SH2EPM.VOL                RECORD NO.:  4
GEO FILE:  SHOR.GEO                  CONDITION:  SH2EPM
DATE:       7-14-1986                PERIOD:     PM
============================================================================
TOTAL VOLUMES:

                          N-S ST: INDUSTRIAL

                            325   928   115
                             |     |     |
                            <--    V    -->
                      .                       .
  / \                 |                       |
   |            55  --                        --    55
   |
 NORTH          40  -->    NO. PHASES: 4    <--     5

               320  --                        --    5
                      |                       |
                      V                       V  E-W ST:
                                                 92 SOUTH
                            <--    .    -->
                             |     |     |
                            292   390    15
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	325	2	464	1	115	0	0	0	0	0	0	0	0
WB	1	55	0	0	0	0	0	0	1	10	0	0	0	0
NB	1	15	2	195	1	292	0	0	0	0	0	0	0	0
EB	1	320	0	0	0	0	0	0	1	95	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	L		T			T		L		
VOLUME	292	+	464	+		95	+	5	=	856

==

VOLUME TO CAPACITY RATIO (V/C) = .62
INTERSECTION LEVEL OF SERVICE (LOS) = B

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

```
JOB NAME:  SHORELANDS              N-S STREET: INDUSTRIAL
JOB NO.:   5004-03                 E-W STREET: TENNYSON
TM FILE:   SH2EPM.VOL              RECORD NO.:  5
GEO FILE:  SHOR.GEO                CONDITION:  SH2EPM
DATE:      7-14-1986               PERIOD:     PM
```

==

TOTAL VOLUMES:

```
                         N-S ST: INDUSTRIAL

                             0 1253  445
                             !   !    !
                           <--   V    -->
                       .                   .
   / \                 !                   !
    !             0 --                       --  100
    !
  NORTH           0 -->   NO. PHASES: 4    <--    0

                  0 --                       --   64
                       !                   !
                       V                   V  E-W ST:
                                              TENNYSON
                           <--   .    -->
                             !   !    !
                             0  622  195
```

LANE GEOMETRIES AND VOLUMES:

	TURNING MOVEMENT													
	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	626	1	445	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	1	41	1	64	0	0	0	0
NB	0	0	1	408	0	0	1	408	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	408	+	445	+	0	+	64	=	917

==

VOLUME TO CAPACITY RATIO (V/C) = .67

INTERSECTION LEVEL OF SERVICE (LOS) = B

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

```
JOB NAME:  SHORELANDS              N-S STREET: INDUSTRIAL
JOB NO.:   5004-03                 E-W STREET: BAUMBERG
TM FILE:   SH2EPM.VOL              RECORD NO.:  6
GEO FILE:  SHOR.GEO                CONDITION:  SH2EPM
DATE:      7-14-1986               PERIOD:     PM
```

==

TOTAL VOLUMES:

```
                         N-S ST: INDUSTRIAL

                          142 1105   5
                           |    |    |
                          <--   V   -->
                  .                        .
   / \                    |                        |
    |          155 --                         --     5
    |
  NORTH        105 -->    NO. PHASES: 4   <--    20

               445 --                         --   252
                    |                          |
                    V                          V  E-W ST:
                                                  BAUMBERG
                          <--   .   -->
                           |    |    |
                           75  415   15
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	1	623	1	5	1	623	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	277
NB	0	0	1	215	1	75	1	215	0	0	0	0	0	0
EB	1	445	1	105	2	77	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	75	+	623	+	105	+	252	=	1055

==

VOLUME TO CAPACITY RATIO (V/C) = .77

INTERSECTION LEVEL OF SERVICE (LOS) = C

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	HESPERIAN
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH2EPM.VOL	RECORD NO.:	7
GEO FILE:	SHOR.GEO	CONDITION:	SH2EPM
DATE:	7-14-1986	PERIOD:	PM

==

TOTAL VOLUMES:

```
                         N-S ST: HESPERIAN

                           15  680  210
                            |   |    |
                           <--  V   -->
                      .                     .
   / \                |                     |
    |            25 --                       --  412
    |
  NORTH         360 -->    NO. PHASES: 8   <--  223

                835 --                       --   80
                      |                     |
                      V                     V  E-W ST:
                                               INDUSTRIAL
                           <--  .   -->
                            |   |    |
                           180 535  170
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	15	2	340	1	210	0	0	0	0	0	0	0	0
WB	0	0	1	223	1	80	1	412	0	0	0	0	0	0
NB	0	0	1	352	2	90	1	352	0	0	0	0	0	0
EB	1	835	2	180	1	25	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	T		L			L		T		
VOLUME	352	+	210	+		25	+	412	=	999

==

VOLUME TO CAPACITY RATIO (V/C) = .73

INTERSECTION LEVEL OF SERVICE (LOS) = C

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME: SHORELANDS — N-S STREET: 17 WEST
JOB NO.: 5004-03 — E-W STREET: INDUSTRIAL
TM FILE: SH2EPM.VOL — RECORD NO.: 8
GEO FILE: SHOR.GEO — CONDITION: SH2EPM
DATE: 7 14-1986 — PERIOD: PM

==

TOTAL VOLUMES:

```
                              N-S ST: 17 WEST
                                 75    0  240
                                  |    |    |
                                <--    V    -->
                           .                      .
   / \                     |                      |
    |                  0 --                       --    0
    |
  NORTH              975 -->    NO. PHASES: 4   <--   448

                       0 --                       --    0
                           |                      |
                           V                      V  E-W ST:
                                                     INDUSTRIAL
                                <--    .    -->
                                  |    |    |
                                  0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	75	0	0	2	120	0	0	0	0	0	0	0	0
WB	0	0	2	224	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EB	1	0	2	487	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	120	+	487	+	0	=	607

==

VOLUME TO CAPACITY RATIO (V/C) = .44
INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME: SHORELANDS	N-S STREET: 17 EAST
JOB NO.: 5004-03	E-W STREET: INDUSTRIAL
TM FILE: SH2EPM.VOL	RECORD NO.: 9
GEO FILE: SHOR.GEO	CONDITION: SH2EPM
DATE: 7-14-1986	PERIOD: PM

==

TOTAL VOLUMES:

```
                          N-S ST: 17 EAST
                                  0    0    0
                                  |    |    |
                                <--    V    -->
                          ^                        ^
                          |                        |
  / \              165 --                          --  230
   |
   |
 NORTH            1050 -->   NO. PHASES: 4   <--  448

                     0 --                          --    0
                          |                        |
                          V                        V  E-W ST:
                                                      INDUSTRIAL
                                <--    ^    -->
                                  |    |    |
                                  0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	1	230	2	224	0	0	0	0	0	0	0	0	0	0
NB	1	0	0	0	2	0	0	0	0	0	0	0	0	0
EB	0	0	2	607	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	0	+	607	+	0	=	607

==

VOLUME TO CAPACITY RATIO (V/C) = .44
INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME: SHORELANDS　　N-S STREET: INDUSTRIAL
JOB NO.: 5004-03　　E-W STREET: SHORELANDS
TM FILE: SH2EPM.VOL　　RECORD NO.: 10
GEO FILE: SHOR.GEO　　CONDITION: SH2EPM
DATE: 7-16-1986　　PERIOD: PM

==

TOTAL VOLUMES:

```
                            N-S ST: INDUSTRIAL

                               0    0    0
                               |    |    |
                             <--    V    -->
                       ^                       ^
   / \                 |                       |
    |             0 --                         --    0
    |
  NORTH           0 -->    NO. PHASES: 5   <--    0

                220 --                         --    0
                       |                       |
                       V                       V  E-W ST:
                                                  SHORELANDS
                             <--    ^    -->
                               |    |    |
                              104   0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	0	3	0	0	0	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NB	0	0	3	0	2	52	0	0	0	0	0	0	0	0
EB	2	110	0	0	2	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	52	+	0	+	0	+	0	=	52

==

VOLUME TO CAPACITY RATIO (V/C) = .04
INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
==========================================================================
JOB NAME:  SHORELANDS                N-S STREET: BAUMBERG
JOB NO.:   5004-03                   E-W STREET: SHORELANDS
TM FILE:   SH2EPM.VOL                RECORD NO.: 11
GEO FILE:  SHOR.GEO                  CONDITION:  SH2EPM
DATE:      7-14-1986                 PERIOD:     PM
==========================================================================
TOTAL VOLUMES:

                          N-S ST: BAUMBERG

                              0   86    0
                              |   |     |
                            <--   V    -->
                         .                   .
      / \                |                   |
       |            0  --                    --   21
       |
     NORTH          0  -->    NO. PHASES: 5  <--    0

                   62  --                    --  121
                         |                   |
                         V                   V  E-W ST:
                                                SHORELANDS
                            <--   .    -->
                              |   |     |
                             19   23   20
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	0	2	43	1	0	0	0	0	0	0	0	0	0
WB	1	21	3	0	2	60	0	0	0	0	0	0	0	0
NB	1	20	2	11	2	9	0	0	0	0	0	0	0	0
EB	1	62	3	0	2	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	9	+	43	+	0	+	60	=	112

```
==========================================================================
VOLUME TO CAPACITY RATIO (V/C) =  .08
INTERSECTION LEVEL OF SERVICE (LOS) = A
==========================================================================
```

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	ENTRANCE
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH2EPM.VOL	RECORD NO.:	12
GEO FILE:	SHOR.GEO	CONDITION:	SH2EPM
DATE:	7-14-1986	PERIOD:	PM

==

TOTAL VOLUMES:

```
                              N-S ST: ENTRANCE

                                 0    0    0
                                 |    |    |
                               <--    V    -->
                            .                     .
   / \                      |                     |
    |                  0 --                       --    0
    |
  NORTH                0 -->   NO. PHASES: 5    <--   260

                      62 --                       --    0
                            |                     |
                            V                     V   E-W ST:
                                                      SHORELANDS
                               <--    .    -->
                                 |    |    |
                                 0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	0	0	3	86	2	0	0	0	0	0	0	0	0	0
NB	2	0	0	0	2	0	0	0	0	0	0	0	0	0
EB	1	62	3	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB	EB		WB		TOTAL
MOVEMENT	T		L	L		T		
VOLUME	0	+	0	0	+	86	=	86

==

VOLUME TO CAPACITY RATIO (V/C) = .06

INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	EDEN LANDING
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH2EPM.VOL	RECORD NO.:	13
GEO FILE:	SHOR.GEO	CONDITION:	SH2EPM
DATE:	7-14-1986	PERIOD:	[illegible]

TOTAL VOLUMES:

```
                              N-S ST: EDEN LANDING

                                  0    0  111
                                  |    |   |
                                <--    V   -->
                          ^                        ^
    / \                   |                        |
     |                0 --                         --  272
     |
   NORTH              0 -->   NO. PHASES: 5   <--     0

                     41 --                         --     0
                          |                        |
                          V                        V  E-W ST:
                                                      SHORELANDS
                                <--    ^   -->
                                  |    |   |
                                  0    0   0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	0	2	0	2	55	0	0	0	0	0	0	0	0
WB	1	272	3	0	1	0	0	0	0	0	0	0	0	0
NB	1	0	1	0	2	0	0	0	0	0	0	0	0	0
EB	1	41	3	0	1	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	55	+	0	+	0	=	55

VOLUME TO CAPACITY RATIO (V/C) = .04
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
=====================================================================
JOB NAME:  SHORELANDS              N-S STREET: EDEN
JOB NO.:  5004-03                  E-W STREET:  92
TM FILE:  SH3EAM.VOL               RECORD NO.:  1
GEO FILE: SHOR.GEO                 CONDITION:  SH3EAM
DATE:      7-14-1986               PERIOD:     AM
=====================================================================
TOTAL VOLUMES:

                        N-S ST: EDEN

                         115 1254  225
                          |    |    |
                         <--   V   -->
                     .                     .
     / \             |                     |
      |          275 --                    --   45
      |
    NORTH         60 -->  NO. PHASES: 4  <--   40

                  90 --                    --   10
                     |                     |
                     V                     V  E-W ST:
                                               92
                         <--    .    -->
                          |     |     |
                         189   274   10

---------------------------------------------------------------------
LANE GEOMETRIES AND VOLUMES:
```

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	115	0	0	0	0	0	0	1	1479	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	95
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	473
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	425

CRITICAL VOLUMES:

APPROACH	NB	SB		EB		WB		TOTAL
MOVEMENT	L	T		T		L		
VOLUME	189	+1479	+	425	+	10	=	2103

```
=====================================================================
VOLUME TO CAPACITY RATIO (V/C) = 1.53
INTERSECTION LEVEL OF SERVICE (LOS) = F
=====================================================================
```

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: CLAWITER
JOB NO.: 5004-03	E-W STREET: 92
TM FILE: SH3EAM.VOL	RECORD NO.: 2
GEO FILE: SHOR.GEO	CONDITION: SH3EAM
DATE: 7-14-1986	PERIOD: AM

TOTAL VOLUMES:

```
                          N-S ST: CLAWITER

                             20  767  365
                              |   |    |
                            <--   V    -->
                         .                  .
  / \                    |                  |
   |                30 --                   -- 385
   |
 NORTH              15 -->  NO. PHASES: 4  <-- 150

                    45 --                   -- 1051
                         |                  |
                         V                  V  E-W ST:
                                                92
                            <--   .    -->
                              |   |    |
                             60  432  152
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	1	1152
WB	1	385	0	0	0	0	0	0	1	1201	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	644
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	90

CRITICAL VOLUMES:

APPROACH	NB	SB		EB	WB		TOTAL
MOVEMENT	L	T		L	T		
VOLUME	60	+1152	+	30	+1201	=	2443

VOLUME TO CAPACITY RATIO (V/C) = 1.78
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME: SHORELANDS — N-S STREET: INDUSTRIAL
JOB NO.: 5004-03 — E-W STREET: 92 NORTH
TM FILE: SH3EAM.VOL — RECORD NO.: 3
GEO FILE: SHOR.GEO — CONDITION: SH3EAM
DATE: 7-14-1986 — PERIOD: AM

==

TOTAL VOLUMES:

```
                           N-S ST: INDUSTRIAL

                              65   295   5
                               |    |    |
                              <--   V   -->
                        .                      .
  / \                   |                      |
   |              220 --                      --   15
   |
 NORTH             15 -->  NO. PHASES: 4  <--      20

                  150 --                      --   60
                        |                      |
                        V                      V  E-W ST:
                                                  92 NORTH
                              <--   .   -->
                               |    |    |
                              425  995   40
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	65	2	147	1	5	0	0	0	0	0	0	0	0
WB	1	15	0	0	0	0	0	0	1	80	0	0	0	0
NB	0	0	1	517	1	425	1	517	0	0	0	0	0	0
EB	1	150	1	15	0	0	0	0	1	220	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	425	+	147	+	220	+	80	=	872

==

VOLUME TO CAPACITY RATIO (V/C) = .63
INTERSECTION LEVEL OF SERVICE (LOS) = B

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	92 SOUTH
TM FILE:	SH3EAM.VOL	RECORD NO.:	4
GEO FILE:	SHOR.GEO	CONDITION:	SH3EAM
DATE:	7-14-1986	PERIOD:	AM

TOTAL VOLUMES:

```
                              N-S ST: INDUSTRIAL

                                180  962   55
                                 |    |    |
                                <--   V   -->
                            .                  .
   / \                      |                  |
    |                   90 --                  --   95
    |
  NORTH                  0 -->  NO. PHASES: 4  <--   5

                       135 --                  --   20
                            |                  |
                            V                  V  E-W ST:
                                                  92 SOUTH
                                <--   .   -->
                                 |    |    |
                                281  960   5
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	180	2	481	1	55	0	0	0	0	0	0	0	0
WB	1	95	0	0	0	0	0	0	1	25	0	0	0	0
NB	1	5	2	480	1	281	0	0	0	0	0	0	0	0
EB	1	135	0	0	0	0	0	0	1	90	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	281	+	481	+	90	+	25	=	877

VOLUME TO CAPACITY RATIO (V/C) = .64
INTERSECTION LEVEL OF SERVICE (LOS) = B

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	TENNYSON
TM FILE:	SH3EAM.VOL	RECORD NO.:	5
GEO FILE:	SHOR.GEO	CONDITION:	SH3EAM
DATE:	7-14-1986	PERIOD:	AM

TOTAL VOLUMES:

```
                         N-S ST: INDUSTRIAL

                             0 1014   92
                             |   |    |
                            <--  V    -->
                        .                  .
   / \                  |                  |
    |              0 --                    --  189
    |
  NORTH            0 -->   NO. PHASES: 4  <--    0

                   0 --                    --  278
                        |                  |
                        V                  V  E-W ST:
                                              TENNYSON
                            <--   .   -->
                             |    |    |
                             0 1017   87
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	507	1	92	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	1	233	1	278	0	0	0	0
NB	0	0	1	552	0	0	1	552	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	552	+	92	+	0	+	278	=	922

VOLUME TO CAPACITY RATIO (V/C) = .67
INTERSECTION LEVEL OF SERVICE (LOS) = B

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
*********************************************************************************
JOB NAME:  SHORELANDS                   N-S STREET: INDUSTRIAL
JOB NO.:   5004-03                      E-W STREET: BAUMBERG
TM FILE:   SH3EAM.VOL                   RECORD NO.:  6
GEO FILE:  SHOR.GEO                     CONDITION:   SH3EAM
DATE:        7-14-1986                  PERIOD:      AM
*********************************************************************************
TOTAL VOLUMES:

                          N-S ST: INDUSTRIAL

                             950  270    4
                              |    |     |
                             <--   V    -->
                       -                      -
                       |                      |
    / \           25 --                        --    2
     |
     |
  NORTH           19 -->     NO. PHASES: 4    <--    72

                  38 --                        --   307
                       |                      |
                       V                      V   E-W ST:
                                                  BAUMBERG
                             <--    -    -->
                              |     |     |
                             417 1126     4
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	1	270	1	4	1	950	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	381
NB	0	0	1	565	1	417	1	565	0	0	0	0	0	0
EB	1	38	1	19	2	12	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB	EB		WB		TOTAL
MOVEMENT	L		T	L		T		
VOLUME	417	+	950	12	+	381	=	1760

VOLUME TO CAPACITY RATIO (V/C) = 1.28
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	HESPERIAN
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH3EAM.VOL	RECORD NO.:	7
GEO FILE:	SHOR.GEO	CONDITION:	SH3EAM
DATE:	7-16-1986	PERIOD:	AM

===

TOTAL VOLUMES:

```
                             N-S ST: HESPERIAN
                                --------------
                               45  325  220
                                !   !    !
                              <--   V    -->
                        .                        .
   / \                  !                        !
    !               5 --                         --  479
    !
  NORTH           663 -->   NO. PHASES: 8    <--  766

                  110 --                         --  160
                        !                        !
                        V                        V  E-W ST:
                                                    INDUSTRIAL
                              <--   .    -->
                                !   !    !
                             1659 1150   85
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	45	2	162	1	220	0	0	0	0	0	0	0	0
WB	0	0	1	622	1	160	1	622	0	0	0	0	0	0
NB	0	0	1	617	2	829	1	617	0	0	0	0	0	0
EB	1	110	2	331	1	5	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	829	+	162	+	5	+	622	=	1618

===

VOLUME TO CAPACITY RATIO (V/C) = 1.18

INTERSECTION LEVEL OF SERVICE (LOS) = F

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
============================================================================
JOB NAME:   SHORELANDS                N-S STREET: 17 WEST
JOB NO.:    5004-03                   E-W STREET: INDUSTRIAL
TM FILE:    SH3EAM.VOL                RECORD NO.:  8
GEO FILE:   SHOR.GEO                  CONDITION:   SH3EAM
DATE:       7-16-1986                 PERIOD:      AM
============================================================================
TOTAL VOLUMES:

                          N-S ST: 17 WEST

                            365    0   320
                             |     |    |
                            <--    V   -->
                     .                          .
      / \            |                          |
       |         0 --                           --    0
       |
     NORTH     554 -->     NO. PHASES: 4      <-- 1394

               106 --                           --    0
                     |                          |
                     V                          V  E-W ST:
                                                   INDUSTRIAL
                            <--    .   -->
                             |     |    |
                              0    0    0

----------------------------------------------------------------------------
LANE GEOMETRIES AND VOLUMES:
```

	TURNING MOVEMENT													
	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	365	0	0	2	160	0	0	0	0	0	0	0	0
WB	0	0	2	697	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EB	1	106	2	277	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	0	+	160	+	0	+	697	=	857

VOLUME TO CAPACITY RATIO (V/C) = .62
INTERSECTION LEVEL OF SERVICE (LOS) = B

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
=====================================================================
JOB NAME:  SHORELANDS                N-S STREET: 17 EAST
JOB NO.:   5004-03                   E-W STREET: INDUSTRIAL
TM FILE:   SH3EAM.VOL                RECORD NO.:  9
GEO FILE:  SHOR.GEO                  CONDITION:  SH3EAM
DATE:      7-16-1986                 PERIOD:     AM
=====================================================================
TOTAL VOLUMES:

                          N-S ST: 17 EAST

                              0    0    0
                              |    |    |
                           <--     V    -->
                        .                      .
   / \                  |                      |
    |               40 --                      --  215
    |
  NORTH            824 -->   NO. PHASES: 4   <-- 1394

                     0 --                      --    0
                        |                      |
                        V                      V  E-W ST:
                                                  INDUSTRIAL
                           <--     .    -->
                             |     |    |
                             0     0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	1	215	2	697	0	0	0	0	0	0	0	0	0	0
NB	1	0	0	0	2	0	0	0	0	0	0	0	0	0
EB	0	0	2	432	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	0	+	0	+	40	+	697	=	737

```
=====================================================================
VOLUME TO CAPACITY RATIO (V/C) =   .54
INTERSECTION LEVEL OF SERVICE (LOS) = A
=====================================================================
```

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: INDUSTRIAL
JOB NO.: 5004-03	E-W STREET: SHORELANDS
TM FILE: SH3EAM.VOL	RECORD NO.: 10
GEO FILE: SHOR.GEO	CONDITION: SH3EAM
DATE: 7-16-1986	PERIOD: AM

TOTAL VOLUMES:

```
                         N-S ST: INDU. 'RIAL

                              0    0    0
                              |    |    |
                            <--    V    -->
                         .                     .
  / \                    |                     |
   |                 0 --                      --    0
   |
 NORTH               0 -->   NO. PHASES: 5   <--    0

                   289 --                      --    0
                         |                     |
                         V                     V   E-W ST:
                                                   SHORELANDS
                            <--    .    -->
                              |    |    |
                            789    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	0	3	0	0	0	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NB	0	0	3	0	2	394	0	0	0	0	0	0	0	0
EB	2	144	0	0	2	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	394	+	0	+	0	+	0	=	394

VOLUME TO CAPACITY RATIO (V/C) = .29
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	BAUMBERG
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH3EAM.VOL	RECORD NO.:	11
GEO FILE:	SHOR.GEO	CONDITION:	SH3EAM
DATE:	7-14-1986	PERIOD:	AM

==

TOTAL VOLUMES:

```
                                N-S ST: BAUMBERG

                              300  200  140
                               |    |    |
                              <--   V   -->
                        .                      .
   / \                  |                      |
    |              0 --                        --   0
    |
  NORTH          317 -->    NO. PHASES: 5    <--  500

                 100 --                        --  289
                        |                      |
                        V                      V  E-W ST:
                                                  SHORELANDS
                              <--    .    -->
                               |     |     |
                               17   92    20
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	300	2	100	1	140	0	0	0	0	0	0	0	0
WB	1	0	3	166	2	144	0	0	0	0	0	0	0	0
NB	1	20	2	46	2	8	0	0	0	0	0	0	0	0
EB	1	100	3	105	2	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	46	+	140	+	105	+	144	=	435

==

VOLUME TO CAPACITY RATIO (V/C) = .32

INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	ENTRANCE
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH3EAM.VOL	RECORD NO.:	12
GEO FILE:	SHOR.GEO	CONDITION:	SH3EAM
DATE:	7-14-1986	PERIOD:	AM

==

TOTAL VOLUMES:

```
                          N-S ST: ENTRANCE

                             0  317   0
                             |   |    |
                           <--   V    -->
                       .                    .
  / \                  |                    |
   |               0 --                     --    0
   |
 NORTH           300 -->   NO. PHASES: 5   <--    0

                   0 --                     --    0
                       |                    |
                       V                    V  E-W ST:
                                               SHORELANDS
                           <--   .    -->
                             |   |    |
                             0   0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	0	0	3	0	2	0	0	0	0	0	0	0	0	0
NB	2	0	0	0	2	0	0	0	0	0	0	0	0	0
EB	1	0	3	100	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	0	+	100	+	0	=	100

==

VOLUME TO CAPACITY RATIO (V/C) = .07

INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
========================================================================
JOB NAME:  SHORELANDS                N-S STREET: EDEN LANDING
JOB NO.:  5004-03                    E-W STREET: SHORELANDS
TM FILE:  SH3EAM.VOL                 RECORD NO.: 13
GEO FILE: SHOR.GEO                   CONDITION:  SH3EAM
DATE:      7-14-1986                 PERIOD:     AM
========================================================================
TOTAL VOLUMES:

                        N-S ST: EDEN LANDING
                                ____________

                           574   0  288
                            !    !   !
                           <--   V   -->
                     ^                      ^
  / \                !                      !
   !           258 --                       --  130
   !
 NORTH         317 -->  NO. PHASES: 5   <--     0
 _____                              _
                 0 --                       --    0
                     !                      !
                     V                      V  E-W ST:
                                               SHORELANDS
                           <--   ^   -->       ______________
                            !    !   !
                             0   0   0

------------------------------------------------------------------------
LANE GEOMETRIES AND VOLUMES:
```

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	574	2	0	2	144	0	0	0	0	0	0	0	0
WB	1	130	3	0	1	0	0	0	0	0	0	0	0	0
NB	1	0	1	0	2	0	0	0	0	0	0	0	0	0
EB	1	0	3	105	1	258	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	0	+	144	+	258	+	0	=	402

```
========================================================================
VOLUME TO CAPACITY RATIO (V/C) =  .29
INTERSECTION LEVEL OF SERVICE (LOS) = A
========================================================================
```

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	EDEN
JOB NO.:	5004-03	E-W STREET:	92
TM FILE:	SH3EPM.VOL	RECORD NO.:	1
GEO FILE:	SHOR.GEO	CONDITION:	SH3EPM
DATE:	7-14-1986	PERIOD:	PM

===

TOTAL VOLUMES:

```
                                N-S ST: EDEN

                                  450  501  105
                                   |    |    |
                                  <--   V   -->
                          ^                             ^
                          |                             |
   / \               190 --                             --  110
    |
    |
  NORTH               30 -->     NO. PHASES: 4     <--  210

                      15 --                             --    5
                          |                             |
                          V                             V  E-W ST:
                                                            92
                                  <--   ^   -->
                                   |    |    |
                                  781  906   10
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	450	0	0	0	0	0	0	1	606	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	325
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	1697
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	235

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	1697	+	105	+	190	+	325	=	2317

===

VOLUME TO CAPACITY RATIO (V/C) = 1.69

INTERSECTION LEVEL OF SERVICE (LOS) = F

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
=========================================================================
JOB NAME:  SHORELANDS                N-S STREET: CLAWITER
JOB NO.:  5004-03                    E-W STREET:  92
TM FILE:  SH3EPM.VOL                 RECORD NO.:  2
GEO FILE: SHOR.GEO                   CONDITION:  SH3EPM
DATE:      7-14-1986                 PERIOD:     PM
=========================================================================
TOTAL VOLUMES:

                         N-S ST: CLAWITER

                           80  222   90
                            |   |    |
                          <--   V    -->
                       .                   .
  / \                  |                   |
   |           365 --                      --  175
   |
 NORTH         470 -->   NO. PHASES: 4   <--  190

                30 --                      --  260
                     |                     |
                     V                     V  E-W ST:
                                                92
                          <--    .    -->
                            |    |    |
                           70  425  476
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	1	392
WB	1	175	0	0	0	0	0	0	1	450	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	971
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	865

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	971	+	90	+	865	+	260	=	2186

VOLUME TO CAPACITY RATIO (V/C) = 1.59
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	92 NORTH
TM FILE:	SH3EPM.VOL	RECORD NO.:	3
GEO FILE:	SHOR.GEO	CONDITION:	SH3EPM
DATE:	7-14-1986	PERIOD:	PM

TOTAL VOLUMES:

```
                        N-S ST: INDUSTRIAL

                          70 1440   5
                           |   |    |
                          <--  V    -->
                     .                      .
  / \                |                      |
   |           105 --                       --    5
   |
 NORTH          25 -->    NO. PHASES: 4   <--     5

                80 --                       --   25
                     |                      |
                     V                      V  E-W ST:
                                               92 NORTH
                          <--   .   -->
                           |    |    |
                          200  325   40
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	70	2	720	1	5	0	0	0	0	0	0	0	0
WB	1	5	0	0	0	0	0	0	1	30	0	0	0	0
NB	0	0	1	182	1	200	1	182	0	0	0	0	0	0
EB	1	80	1	25	0	0	0	0	1	105	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	200	+	720	+	105	+	30	=	1055

VOLUME TO CAPACITY RATIO (V/C) = .77
INTERSECTION LEVEL OF SERVICE (LOS) = C

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
JOB NAME:  SHORELANDS                 N-S STREET: INDUSTRIAL
JOB NO.:   5004-03                    E-W STREET: 92 SOUTH
TM FILE:   SH3EPM.VOL                 RECORD NO.:  4
GEO FILE:  SHOR.GEO                   CONDITION:   SH3EPM
DATE:      7-14-1986                  PERIOD:      PM
```

TOTAL VOLUMES:

```
                     N-S ST: INDUSTRIAL

                      325 1078  115
                       |    |    |
                      <--   V   -->
                .                      .
                |                      |
          55  --                       --   55

NORTH     40  -->    NO. PHASES: 4    <--    5

         320  --                       --    5
                |                      |
                V                      V  E-W ST:
                                          92 SOUTH
                      <--   .   -->
                       |    |    |
                      879  390   15
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	325	2	539	1	115	0	0	0	0	0	0	0	0
WB	1	55	0	0	0	0	0	0	1	10	0	0	0	0
NB	1	15	2	195	1	879	0	0	0	0	0	0	0	0
EB	1	320	0	0	0	0	0	0	1	95	0	0	0	0

CRITICAL VOLUMES:

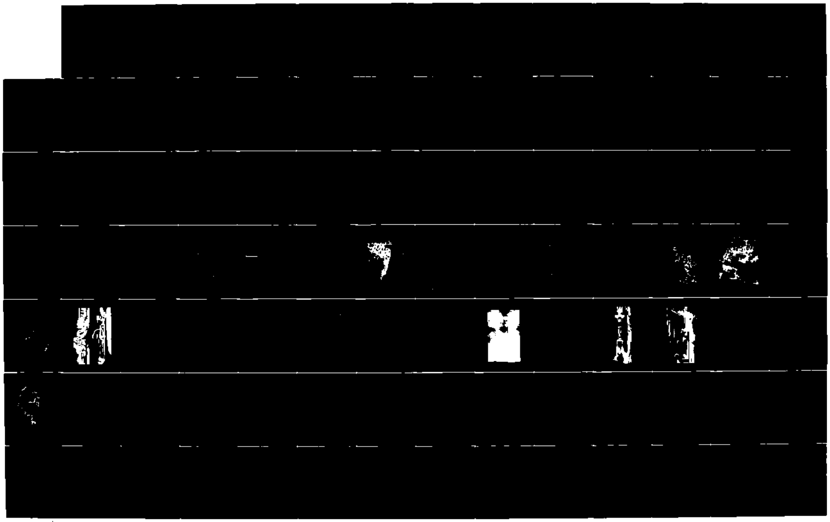
APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	879	+	539	+	95	+	5	=	1518

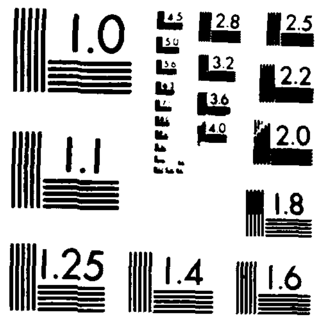
VOLUME TO CAPACITY RATIO (V/C) = 1.10
INTERSECTION LEVEL OF SERVICE (LOS) = F

AD-A180 378 THE SHORELANDS: GENERAL POLICIES PLAN AMENDMENT 83-23 ZONE CHANGE APPLICATION 83-24 VOLUME 2 APPENDICES(U) COLE/MILLS ASSOCIATES MARTINEZ CA MAR 87

2/3

UNCLASSIFIED F/G 6/6 NL





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	TENNYSON
TM FILE:	SH3EPM.VOL	RECORD NO.:	5
GEO FILE:	SHOR.GEO	CONDITION:	SH3EPM
DATE:	7-14-1986	PERIOD:	PM

===

TOTAL VOLUMES:

```
                          N-S ST: INDUSTRIAL

                             0 1403  445
                             !   !    !
                          <--    V    -->
                       .                  .
 / \                   !                  !
  !                0 --                   -- 100
  !
 NORTH             0 -->  NO. PHASES: 4  <--   0

                   0 --                   -- 126
                       !                  !
                       V                  V   E-W ST:
                                              TENNYSON
                          <--    .    -->
                             !   !    !
                             0 1209  345
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	701	1	445	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	1	113	1	126	0	0	0	0
NB	0	0	1	777	0	0	1	777	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	777	+	445	+	0	+	126	=	1348

===

VOLUME TO CAPACITY RATIO (V/C) = .98

INTERSECTION LEVEL OF SERVICE (LOS) = E

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS — N-S STREET: INDUSTRIAL
JOB NO.: 5004-03 — E-W STREET: BAUMBERG
TM FILE: SH3EPM.VOL — RECORD NO.: 6
GEO FILE: SHOR.GEO — CONDITION: SH3EPM
DATE: 7-14-1986 — PERIOD: PM

TOTAL VOLUMES:

```
                         N-S ST: INDUSTRIAL

                          354 1105   5
                           |    |    |
                          <--   V   -->

  / \              |                       |
   |        1130 --                        --    5
   |
  NORTH      105 -->     NO. PHASES: 4    <--   20

             445 --                        --   10
                   |                       |
                   V                       V  E-W ST:
                                              BAUMBERG
                          <--   ^   -->
                           |    |    |
                           75  415   15
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	1	729	1	5	1	729	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	35
NB	0	0	1	215	1	75	1	215	0	0	0	0	0	0
EB	1	445	1	105	2	565	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	75	+	729	+	565	+	35	=	1404

VOLUME TO CAPACITY RATIO (V/C) = 1.02
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	HESPERIAN
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH3EPM.VOL	RECORD NO.:	7
GEO FILE:	SHOR.GEO	CONDITION:	SH3EPM
DATE:	7-16-1986	PERIOD:	PM

===

TOTAL VOLUMES:

```
                          N-S ST: HESPERIAN

                             15  680  210
                              |   |    |
                           <--    V    -->
                        .                     .
   / \                  |                     |
    |              25 --                       --  250
    |
  NORTH           875 -->   NO. PHASES: 8   <--  266

                 1204 --                       --   80
                        |                     |
                        V                     V  E-W ST:
                                                 INDUSTRIAL
                           <--    .    -->
                              |   |    |
                             459 535  170
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	15	2	340	1	210	0	0	0	0	0	0	0	0
WB	0	0	1	258	1	80	1	258	0	0	0	0	0	0
NB	0	0	1	352	2	229	1	352	0	0	0	0	0	0
EB	1	1204	2	437	1	25	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	229	+	340	+	437	+	80	=	1086

===

VOLUME TO CAPACITY RATIO (V/C) = .79

INTERSECTION LEVEL OF SERVICE (LOS) = C

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
========================================================================
JOB NAME:  SHORELANDS              N-S STREET: 17 WEST
JOB NO.:   5004-03                 E-W STREET: INDUSTRIAL
TM FILE:   SH3EPM.VOL              RECORD NO.:  8
GEO FILE:  SHOR.GEO                CONDITION:  SH3EPM
DATE:       7-16-1986              PERIOD:     PM
========================================================================
TOTAL VOLUMES:

                         N-S ST: 17 WEST

                            75    0   240
                             :    :    :
                          <--     V    -->
                      ^                         ^
  / \                 :                         :
   :              0 --                          --    0
   :
 NORTH         1180 -->    NO. PHASES: 4    <--   491

                310 --                          --    0
                      :                         :
                      V                         V  E-W ST:
                                                   INDUSTRIAL
                          <--     ^    -->
                            :     :    :
                            0     0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	75	0	0	2	120	0	0	0	0	0	0	0	0
WB	0	0	2	245	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EB	1	310	2	590	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	120	+	590	+	0	=	710

==

VOLUME TO CAPACITY RATIO (V/C) = .52

INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
=====================================================================
JOB NAME:  SHORELANDS              N-S STREET: 17 EAST
JOB NO.:   5004-03                 E-W STREET: INDUSTRIAL
TM FILE:   SH3EPM.VOL              RECORD NO.:  9
GEO FILE:  SHOR.GEO                CONDITION:  SH3EPM
DATE:       7-16-1986              PERIOD:     PM
=====================================================================
TOTAL VOLUMES:

                          N-S ST: 17 EAST

                              0    0    0
                              |    |    |
                             <--   V   -->
                         ^                    ^
   / \                   |                    |
    |               165 --                    --  230
    |
  NORTH            1255 -->   NO. PHASES: 4   <--  491

                      0 --                    --    0
                         |                    |
                         V                    V  E-W ST:
                                                 INDUSTRIAL
                             <--   ^   -->
                              |    |    |
                              0    0    0

---------------------------------------------------------------------
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	1	230	2	245	0	0	0	0	0	0	0	0	0	0
NB	1	0	0	0	2	0	0	0	0	0	0	0	0	0
EB	0	0	2	710	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	0	+	710	+	0	=	710

VOLUME TO CAPACITY RATIO (V/C) = .52
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: INDUSTRIAL
JOB NO.: 5004-03	E-W STREET: SHORELANDS
TM FILE: SH3EPM.VOL	RECORD NO.: 10
GEO FILE: SHOR.GEO	CONDITION: SH3EPM
DATE: 7-16-1986	PERIOD: PM

TOTAL VOLUMES:

```
                          N-S ST: INDUSTRIAL

                               0    0    0
                               !    !    !
                              <--   V   -->
                         .                      .
  / \                    !                      !
   !                0 --                        --    0
   !
 NORTH              0 -->   NO. PHASES: 5   <--    0

                  814 --                        --    0
                         !                      !
                         V                      V  E-W ST:
                                                   SHORELANDS
                              <--    .    -->
                               !     !     !
                              377    0     0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	0	3	0	0	0	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NB	0	0	3	0	2	188	0	0	0	0	0	0	0	0
EB	2	407	0	0	2	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	188	+	0	+	0	+	0	=	188

VOLUME TO CAPACITY RATIO (V/C) = .14
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME: SHORELANDS — N-S STREET: BAUMBERG
JOB NO.: 5004-03 — E-W STREET: SHORELANDS
TM FILE: SH3EPM.VOL — RECORD NO.: 11
GEO FILE: SHOR.GEO — CONDITION: SH3EPM
DATE: 7-14-1986 — PERIOD: PM

==

TOTAL VOLUMES:

```
                              N-S ST: BAUMBERG

                                 212   57   50
                                  |    |    |
                                 <--   V   -->
                            .                   .
   / \                      |                   |
    |                 884 --                    --   60
    |
  NORTH               766 -->   NO. PHASES: 5  <--  257

                       50 --                    --  120
                            |                   |
                            V                   V  E-W ST:
                                                   SHORELANDS
                                 <--   .   -->
                                  |    |    |
                                  30   91   20
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	212	2	28	1	50	0	0	0	0	0	0	0	0
WB	1	60	3	85	2	60	0	0	0	0	0	0	0	0
NB	1	20	2	45	2	15	0	0	0	0	0	0	0	0
EB	1	50	3	255	2	442	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	45	+	50	+	442	+	85	=	622

==

VOLUME TO CAPACITY RATIO (V/C) = .45
INTERSECTION LEVEL OF SERVICE (LOS) = A

==

```
     OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS
=========================================================================
JOB NAME:  SHORELANDS                 N-S STREET: ENTRANCE
JOB NO.:  5004-03                     E-W STREET: SHORELANDS
TM FILE:  SH3EPM.VOL                  RECORD NO.: 12
GEO FILE: SHOR.GEO                    CONDITION:  SH3EPM
DATE:      7-16 1986                  PERIOD:     PM
=========================================================================
TOTAL VOLUMES:

                        N-S ST: ENTRANCE

                              0    0    0
                              !    !    !
                             <--   V   -->
                         .                   .
  / \                    !                   !
   !                 0 --                    --   0
   !
 NORTH             300 -->  NO. PHASES: 5  <--  590

                     0 --                    --   0
                         !                   !
                         V                   V  E-W ST:
                                                SHORELANDS
                             <--    .    -->
                              !     !     !
                              0     0     0

-------------------------------------------------------------------------
LANE GEOMETRIES AND VOLUMES:

                               TURNING MOVEMENT
         R         T         L        R+T       T+L       R+L      R+T+L
     GEO VOL   GEO VOL   GEO VOL   GEO VOL   GEO VOL   GEO VOL   GEO VOL

SB    0    0    0    0    0    0    0    0    0    0    0    0    0    0
WB    0    0    3  196    2    0    0    0    0    0    0    0    0    0
NB    2    0    0    0    2    0    0    0    0    0    0    0    0    0
EB    1    0    3  100    0    0    0    0    0    0    0    0    0    0
-------------------------------------------------------------------------
CRITICAL VOLUMES:

         APPROACH    NB     SB             EB     WB        TOTAL
         MOVEMENT     T      L              L      T
         VOLUME       0  +   0     +        0  + 196   =     196

=========================================================================
VOLUME TO CAPACITY RATIO (V/C) =  .14
INTERSECTION LEVEL OF SERVICE (LOS) = A
=========================================================================
```

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	EDEN LANDING
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH3EPM.VOL	RECORD NO.:	13
GEO FILE:	SHOR.GEO	CONDITION:	SH3EPM
DATE:	7-14-1986	PERIOD:	PM

TOTAL VOLUMES:

```
                        N-S ST: EDEN LANDING

                          270   0  136
                           |    |   |
                          <--   V   -->
                     .                      .
   / \               |                      |
    |           590 --                      --  595
    |
  NORTH         146 -->   NO. PHASES: 5   <--    0

                  0 --                      --   0
                     |                      |
                     V                      V  E-W ST:
                                               SHORELANDS
                          <--   .   -->
                           |    |   |
                           0    0   0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	270	2	0	2	68	0	0	0	0	0	0	0	0
WB	1	595	3	0	1	0	0	0	0	0	0	0	0	0
NB	1	0	1	0	2	0	0	0	0	0	0	0	0	0
EB	1	0	3	48	1	590	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	0	+	68	+	590	+	0	=	658

VOLUME TO CAPACITY RATIO (V/C) = .48
INTERSECTION LEVEL OF SERVICE (LOS) = A

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	EDEN
JOB NO.:	5004-03	E-W STREET:	92
TM FILE:	SH4EAM.VOL	RECORD NO.:	1
GEO FILE:	SHOR.GEO	CONDITION:	SH4EAM
DATE:	1- 1-1980	PERIOD:	AM

==

TOTAL VOLUMES:

```
                              N-S ST: EDEN

                                 132 2107   259
                                  |    |     |
                                <--    V    -->
                          ^                       ^
   / \                    |                       |
    |               316 --                        --    52
    |
  NORTH              69 -->   NO. PHASES: 4    <--      46

                    346 --                        --    12
                          |                       |
                          V                       V  E-W ST:
                                                      92
                                <--    ^    -->
                                  |    |     |
                                 510  302    12
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	132	0	0	0	0	0	0	1	2366	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	110
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	824
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	731

CRITICAL VOLUMES:

APPROACH	NB	SB		EB		WB		TOTAL
MOVEMENT	L	T		T		L		
VOLUME	510	+2366	+	731	+	12	=	3619

==

VOLUME TO CAPACITY RATIO (V/C) = 2.63

INTERSECTION LEVEL OF SERVICE (LOS) = F

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	CLAWITER
JOB NO.:	5004-03	E-W STREET:	92
TM FILE:	SH4EAM.VOL	RECORD NO.:	2
GEO FILE:	SHOR.GEO	CONDITION:	SH4EAM
DATE:	1- 1-1980	PERIOD:	AM

==

TOTAL VOLUMES:

```
                            N-S ST: CLAWITER

                               23 1014  420
                                !   !    !
                               <--  V    -->
                          ^                      ^
    / \                   !                      !
     !               35 --                       --  443
     !
   NORTH             17 -->   NO. PHASES: 4   <--  173

                     52 --                       -- 1866
                          !                      !
                          V                      V  E-W ST:
                                                     92
                               <--  ^    -->
                                !   !    !
                               69  528  115
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	1	1457
WB	1	443	0	0	0	0	0	0	1	2039	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	712
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	104

CRITICAL VOLUMES:

APPROACH	NB	SB		EB	WB		TOTAL
MOVEMENT	L	T		L	T		
VOLUME	69	+1457	+	35	+2039	=	3600

==

VOLUME TO CAPACITY RATIO (V/C) = 2.62
INTERSECTION LEVEL OF SERVICE (LOS) = F

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	92 NORTH
TM FILE:	SH4EAM.VOL	RECORD NO.:	3
GEO FILE:	SHOR.GEO	CONDITION:	SH4EAM
DATE:	1- 1-1980	PERIOD:	AM

===

TOTAL VOLUMES:

```
                           N-S ST: INDUSTRIAL

                              75  352    6
                               |   |     |
                             <--   V    -->
                        .                      .
  / \                   |                      |
   |              253 --                        --   17
   |
  NORTH            17 -->    NO. PHASES: 4    <--    23

                 1300 --                        --   69
                        |                      |
                        V                      V  E-W ST:
                                                  92 NORTH
                             <--    .   -->
                              |     |    |
                             497  1149   46
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	75	2	176	1	6	0	0	0	0	0	0	0	0
WB	1	17	0	0	0	0	0	0	1	92	0	0	0	0
NB	0	0	1	597	1	497	1	597	0	0	0	0	0	0
EB	1	1300	1	17	0	0	0	0	1	253	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	497	+	176	+	253	+	92	=	1018

===

VOLUME TO CAPACITY RATIO (V/C) = .74

INTERSECTION LEVEL OF SERVICE (LOS) = C

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	92 SOUTH
TM FILE:	SH4EAM.VOL	RECORD NO.:	4
GEO FILE:	SHOR.GEO	CONDITION:	SH4EAM
DATE:	1- 1-1980	PERIOD:	AM

==

TOTAL VOLUMES:

```
                          N-S ST: INDUSTRIAL

                            207 1577   63
                             |    |    |
                            <--   V    -->
                       ^                    ^
   / \                 |                    |
    |            104 --                     --  109
    |
  NORTH            5 -->   NO. PHASES: 4   <--    6

                 176 --                     --   23
                       |                    |
                       V                    V  E-W ST:
                                               92 SOUTH
                            <--   ^    -->
                             |    |    |
                            457 1109   6
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	207	2	788	1	63	0	0	0	0	0	0	0	0
WB	1	109	0	0	0	0	0	0	1	29	0	0	0	0
NB	1	6	2	554	1	457	0	0	0	0	0	0	0	0
EB	1	176	0	0	0	0	0	0	1	109	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	457	+	788	+	104	+	29	=	1378

==

VOLUME TO CAPACITY RATIO (V/C) = 1.00
INTERSECTION LEVEL OF SERVICE (LOS) = F

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	TENNYSON
TM FILE:	SH4EAM.VOL	RECORD NO.:	5
GEO FILE:	SHOR.GEO	CONDITION:	SH4EAM
DATE:	1- 1-1980	PERIOD:	AM

TOTAL VOLUMES:

```
                         N-S ST: INDUSTRIAL

                           5 1339  105
                           |   |    |
                          <--  V    -->
                     ^                      ^
      / \            |                      |
       |         0 --                       --  232
       |
     NORTH       0 -->   NO. PHASES: 4   <--      5

                 0 --                       --  739
                     |                      |
                     V                      V  E-W ST:
                                               TENNYSON
                          <--  ^    -->
                           |   |    |
                           0 1106  300
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	672	1	105	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	1	488	1	739	0	0	0	0
NB	0	0	1	703	0	0	1	703	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	T		L			T		L		
VOLUME	703	+	105	+		0	+	739	=	1547

VOLUME TO CAPACITY RATIO (V/C) = 1.13
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
JOB NAME:  SHORELANDS          N-S STREET: INDUSTRIAL
JOB NO.:   5004-03             E-W STREET: BAUMBERG
TM FILE:   SH4EAM.VOL          RECORD NO.:  6
GEO FILE:  SHOR.GEO            CONDITION:  SH4EAM
DATE:      1- 1-1980           PERIOD:     AM
```

TOTAL VOLUMES:

```
                        N-S ST: INDUSTRIAL

                          1477  417    5
                            |    |     |
                           <--   V    -->
                      .                     .
  / \                 |                     |
   |          486 --                        --    5
   |
 NORTH         19 -->    NO. PHASES: 4   <--    72

               38 --                        --    5
                    |                     |
                    V                     V  E-W ST:
                                             BAUMBERG
                           <--   .    -->
                            |    |     |
                           452 1242    5
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	1	417	1	5	1	1477	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	82
NB	0	0	1	623	1	452	1	623	0	0	0	0	0	0
EB	1	38	1	19	2	243	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB	SB		EB		WB		TOTAL
MOVEMENT	L	T		L		T		
VOLUME	452	+1477	+	243	+	82	=	2254

VOLUME TO CAPACITY RATIO (V/C) = 1.64
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: HESPERIAN
JOB NO.: 5004-03	E-W STREET: INDUSTRIAL
TM FILE: SH4EAM.VOL	RECORD NO.: 7
GEO FILE: SHOR.GEO	CONDITION: SH4EAM
DATE: 1- 1-1980	PERIOD: AM

TOTAL VOLUMES:

```
                         N-S ST: HESPERIAN

                           139  325  332
                            |    |    |
                           <--   V   -->
                        ^                  ^
  / \                   |                  |
   |               46 --                   --  411
   |
 NORTH            812 -->   NO. PHASES: 8  <-- 2881

                  341 --                   --  215
                        |                  |
                        V                  V  E-W ST:
                                              INDUSTRIAL
                           <--   ^   -->
                            |    |    |
                           1537 1150  176
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	139	2	162	1	332	0	0	0	0	0	0	0	0
WB	0	0	1	1646	1	215	1	1646	0	0	0	0	0	0
NB	0	0	1	663	2	768	1	663	0	0	0	0	0	0
EB	1	341	2	406	1	46	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	663	+	332	+	46	+	1646	=	2687

VOLUME TO CAPACITY RATIO (V/C) = 1.95
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	17 WEST
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH4EAM.VOL	RECORD NO.:	8
GEO FILE:	SHOR.GEO	CONDITION:	SH4EAM
DATE:	1- 1-1980	PERIOD:	AM

===

TOTAL VOLUMES:

```
                         N-S ST: 17 WEST

                       1008    0   320
                         |     |    |
                        <--    V   -->
                   ^                         ^
  / \              |                         |
   |          0  --                          --     0
   |
 NORTH      973  -->    NO. PHASES: 4     <--  3380

            338  --                          --     0
                   |                         |
                   V                         V  E-W ST:
                                                INDUSTRIAL
                        <--    ^   -->
                         |     |    |
                          0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	1008	0	0	2	160	0	0	0	0	0	0	0	0
WB	0	0	2	1690	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EB	1	338	2	486	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	0	+	160	+	0	+	1690	=	1850

===

VOLUME TO CAPACITY RATIO (V/C) = 1.35

INTERSECTION LEVEL OF SERVICE (LOS) = F

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	17 EAST
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH4EAM.VOL	RECORD NO.:	9
GEO FILE:	SHOR.GEO	CONDITION:	SH4EAM
DATE:	1- 1-1980	PERIOD:	AM

TOTAL VOLUMES:

```
                          N-S ST: 17 EAST
                                  -----------
                             0    0    0
                             |    |    |
                          <--     V    -->
                        ^                    ^
    / \                 |                    |
     |           318  --                     --  215
     |
   NORTH         958  -->   NO. PHASES: 4   <--  1899

                   0  --                     --    0
                        |                    |
                        V                    V  E-W ST:
                                                INDUSTRIAL
                          <--     ^    -->
                            |     |    |
                          1482    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	1	215	2	949	0	0	0	0	0	0	0	0	0	0
NB	1	0	0	0	2	741	0	0	0	0	0	0	0	0
EB	0	0	2	638	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	741	+	0	+	318	+	949	=	2008

VOLUME TO CAPACITY RATIO (V/C) = 1.46
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	SHROELANDS
TM FILE:	SH4EAM.VOL	RECORD NO.:	10
GEO FILE:	SHOR.GEO	CONDITION:	SH4EAM
DATE:	1- 1-1980	PERIOD:	AM

==

TOTAL VOLUMES:

```
                                N-S ST: INDUSTRIAL
                                   25   479    0
                                    |    |     |
                                   <--   V    -->
                              .                      .
    / \                       |                      |
     |                    57 --                      --    0
     |
   NORTH                   0 -->   NO. PHASES: 5   <--     0

                         663 --                      --    0
                              |                      |
                              V                      V  E-W ST:
                                                        SHROELANDS
                                   <--   .    -->
                                    |    |     |
                                  1751 1606    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	25	3	159	0	0	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NB	0	0	3	535	2	875	0	0	0	0	0	0	0	0
EB	2	331	0	0	2	28	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	875	+	159	+	28	+	0	=	1062

==

VOLUME TO CAPACITY RATIO (V/C) = .77

INTERSECTION LEVEL OF SERVICE (LOS) = C

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	BAUMBERG
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH4EAM.VOL	RECORD NO.:	11
GEO FILE:	SHOR.GEO	CONDITION:	SH4EAM
DATE:	1- 1-1980	PERIOD:	AM

==

TOTAL VOLUMES:

```
                               N-S ST: BAUMBERG

                                 944    0   43
                                  |     |    |
                                 <--    V    -->
                           .                          .
    / \                    |                          |
     |              303 --                            --   42
     |
   NORTH            636 -->   NO. PHASES: 5       <-- 1440

                      0 --                            --    0
                           |                          |
                           V                          V  E-W ST:
                                                         SHORELANDS
                                 <--    .    -->
                                  |     |    |
                                   0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	944	2	0	1	43	0	0	0	0	0	0	0	0
WB	1	42	3	480	2	0	0	0	0	0	0	0	0	0
NB	1	0	2	0	2	0	0	0	0	0	0	0	0	0
EB	1	0	3	212	2	151	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	0	+	43	+	151	+	480	=	674

==

VOLUME TO CAPACITY RATIO (V/C) = .49
INTERSECTION LEVEL OF SERVICE (LOS) = A

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	ENTRANCE
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH4EAM.VOL	RECORD NO.:	12
GEO FILE:	SHOR.GEO	CONDITION:	SH4EAM
DATE:	1- 1-1980	PERIOD:	AM

===

TOTAL VOLUMES:

```
                          N-S ST: ENTRANCE
                               0    0    0
                               |    |    |
                             <--    V    -->
                        ^                      ^
   / \                  |                      |
    |               0 --                       --    0
    |
  NORTH           780 -->  NO. PHASES: 5   <-- 1465

                    0 --                       --   271
                        |                      |
                        V                      V  E-W ST:
                                                  SHORELANDS
                             <--    ^    -->
                               |    |    |
                              60    0   57
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	0	0	3	488	2	135	0	0	0	0	0	0	0	0
NB	2	28	0	0	2	30	0	0	0	0	0	0	0	0
EB	1	0	3	260	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	30	+	0	+	0	+	488	=	518

===

VOLUME TO CAPACITY RATIO (V/C) = .38

INTERSECTION LEVEL OF SERVICE (LOS) = A

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME: SHORELANDS | N-S STREET: EDEN LANDING
JOB NO.: 5004-03 | E-W STREET: SHORELANDS
TM FILE: SH4EAM.VOL | RECORD NO.: 13
GEO FILE: SHOR.GEO | CONDITION: SH4EAM
DATE: 1- 1-1980 | PERIOD: AM

==

TOTAL VOLUMES:

```
                            N-S ST: EDEN LANDING

                              210    85 1080
                               |      |   |
                              <--     V   -->
                          .                     .
   / \                    |                     |
    |              212  --                      --   473
    |
  NORTH            510  -->   NO. PHASES: 5   <--   776

                     0  --                      --    62
                          |                     |
                          V                     V  E-W ST:
                                                   SHORELANDS
                              <--     .   -->
                               |      |   |
                                0    58  43
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	210	2	42	2	540	0	0	0	0	0	0	0	0
WB	1	473	3	258	1	62	0	0	0	0	0	0	0	0
NB	1	43	1	58	2	0	0	0	0	0	0	0	0	0
EB	1	0	3	170	1	212	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	T		L			L		T		
VOLUME	58	+	540	+		212	+	258	=	1068

==

VOLUME TO CAPACITY RATIO (V/C) = .78
INTERSECTION LEVEL OF SERVICE (LOS) = C

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
===========================================================================
JOB NAME:  SHORELANDS                  N-S STREET: SHORELANDS
JOB NO.:   5004-03                     E-W STREET: 92 NORTH
TM FILE:   SH4EAM.VOL                  RECORD NO.: 15
GEO FILE:  SHOR.GEO                    CONDITION:  SH4EAM
DATE:       1- 1-1980                  PERIOD:     AM
===========================================================================
```

TOTAL VOLUMES:

```
                         N-S ST: SHORELANDS
                                 0    0    0
                                 |    |    |
                               <--    V    -->
                          ^                       ^
    / \                   |                       |
     |              485 --                        -- 1825
     |
   NORTH              0 -->   NO. PHASES: 2   <--    0

                    452 --                        -- 1186
                          |                       |
                          V                       V  E-W ST:
                                                     92 NORTH
                               <--    ^    -->
                                 |    |    |
                                 0    0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	0	0	0	0	0	0	0	0	0	0	0
WB	1	1825	0	0	2	593	0	0	0	0	0	0	0	0
NB	0	0	2	0	0	0	0	0	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	T		L			T		L		
VOLUME	0	+	0	+		0	+	593	=	593

```
===========================================================================
VOLUME TO CAPACITY RATIO (V/C) =  .40
INTERSECTION LEVEL OF SERVICE (LOS) = A
===========================================================================
```

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

JOB NAME:	SHORELANDS	N-S STREET:	SHORELANDS
JOB NO.:	5004-03	E-W STREET:	92 SOUTH
TM FILE:	SH4EAM.VOL	RECORD NO.:	14
GEO FILE:	SHOR.GEO	CONDITION:	SH4EAM
DATE:	1- 1-1980	PERIOD:	AM

==

TOTAL VOLUMES:

```
                                 N-S ST: SHORELANDS

                                      0 1186    0
                                      |   |     |
                                   <--    V     -->
                                 .                    .
      / \                        |                    |
       |               1040 --                        --     0
       |
     NORTH                0 -->    NO. PHASES: 2   <--       0

                        708 --                        --     0
                             |                        |
                             V                        V   E-W ST:
                                                          92 SOUTH
                                   <--         -->
                                      |   |     |
                                      0  210    0
```

LANE GEOMETRIES AND VOLUMES:

	TURNING MOVEMENT													
	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	593	0	0	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NB	0	0	2	105	0	0	0	0	0	0	0	0	0	0
EB	1	708	0	0	2	520	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	0	+	593	+	520	+	0	=	1113

==

VOLUME TO CAPACITY RATIO (V/C) = .74

INTERSECTION LEVEL OF SERVICE (LOS) = C

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

==

```
JOB NAME:  SHORELANDS          N-S STREET: EDEN
JOB NO.:   5004-03             E-W STREET:  92
TM FILE:   SH4EPM.VOL          RECORD NO.:  1
GEO FILE:  SHOR.GEO            CONDITION:   SH4EPM
DATE:      1- 1-1980           PERIOD:      PM
```

==

TOTAL VOLUMES:

```
                         N-S ST: EDEN
                           518  955  121
                            |    |    |
                           <--   V   -->
                      .                    .
   / \                |                    |
    |           301 --                     --  126
    |
  NORTH          35 -->   NO. PHASES: 4  <--  241

                165 --                     --    6
                      |                    |
                      V                    V  E-W ST:
                                                92
                           <--   .   -->
                            |    |    |
                          1849 1409   12
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	518	0	0	0	0	0	0	1	1076	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	373
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	3270
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	501

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	3270	+	121	+	301	+	373	=	4065

==

VOLUME TO CAPACITY RATIO (V/C) = 2.96

INTERSECTION LEVEL OF SERVICE (LOS) = F

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME: SHORELANDS
JOB NO.: 5004-03
TM FILE: SH4EPM.VOL
GEO FILE: SHOR.GEO
DATE: 1- 1-1980

N-S STREET: CLAWITER
E-W STREET: 92
RECORD NO.: 2
CONDITION: SH4EPM
PERIOD: PM

===

TOTAL VOLUMES:

```
                         N-S ST: CLAWITER
                                 ________________

                           35   765   451
                            |    |     |
                          <--    V     -->
                      .                        .
   / \                |                        |
    |             81 --                        --   92
    |
  NORTH           75 -->   NO. PHASES: 4    <--     29

                 178 --                        --  610
                      |                        |
                      V                        V  E-W ST:
                                                   92
                          <--    .     -->        ________________
                            |    |     |
                           58   798   776
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	1	1251
WB	1	92	0	0	0	0	0	0	1	639	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	1	1632
EB	0	0	0	0	0	0	0	0	0	0	0	0	1	334

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	T		L			T		L		
VOLUME	1632	+	451	+		334	+	610	=	3027

===

VOLUME TO CAPACITY RATIO (V/C) = 2.20
INTERSECTION LEVEL OF SERVICE (LOS) = F

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: INDUSTRIAL
JOB NO.: 5004-03	E-W STREET: 92 NORTH
TM FILE: SH4EPM.VOL	RECORD NO.: 3
GEO FILE: SHOR.GEO	CONDITION: SH4EPM
DATE: 1- 1-1980	PERIOD: PM

TOTAL VOLUMES:

```
                              N-S ST: INDUSTRIAL

                                 78 1657    8
                                  |   |     |
                                 <--  V     -->
                            .                    .
   / \                      |                    |
    |               123 --                       --     7
    |
  NORTH              30 -->   NO. PHASES: 4    <--      7

                    689 --                       --    30
                            |                    |
                            V                    V  E-W ST:
                                                    92 NORTH
                                 <--  .     -->
                                  |   |     |
                                386  375    45
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	78	2	828	1	8	0	0	0	0	0	0	0	0
WB	1	7	0	0	0	0	0	0	1	37	0	0	0	0
NB	0	0	1	210	1	386	1	210	0	0	0	0	0	0
EB	1	689	1	30	0	0	0	0	1	123	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	386	+	828	+	123	+	37	=	1374

VOLUME TO CAPACITY RATIO (V/C) = 1.00
INTERSECTION LEVEL OF SERVICE (LOS) = E

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: INDUSTRIAL
JOB NO.: 5004-03	E-W STREET: 92 SOUTH
TM FILE: SH4EPM.VOL	RECORD NO.: 4
GEO FILE: SHOR.GEO	CONDITION: SH4EPM
DATE: 1- 1-1980	PERIOD: PM

TOTAL VOLUMES:

```
                              N-S ST: INDUSTRIAL

                                 374 1570  132
                                  |    |    |
                                 <--   V   -->
                            .                      .
     / \                    |                      |
      |               63 --                        --   63
      |
    NORTH             46 -->    NO. PHASES: 4  <--      6

                     444 --                        --   6
                            |                      |
                            V                      V  E-W ST:
                                                      92 SOUTH
                                 <--   .   -->
                                  |    |    |
                                1615  635   17
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	374	2	785	1	132	0	0	0	0	0	0	0	0
WB	1	63	0	0	0	0	0	0	1	12	0	0	0	0
NB	1	17	2	317	1	1615	0	0	0	0	0	0	0	0
EB	1	444	0	0	0	0	0	0	1	109	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB				EB		WB		TOTAL
MOVEMENT	L		T				T		L		
VOLUME	1615	+	785		+		109	+	6	=	2515

VOLUME TO CAPACITY RATIO (V/C) = 1.83
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
============================================================================
JOB NAME:   SHORELANDS              N-S STREET: INDUSTRIAL
JOB NO.:   5004-03                  E-W STREET: TENNYSON
TM FILE:   SH4EPM.VOL               RECORD NO.:  5
GEO FILE:  SHOR.GEO                 CONDITION:   SH4EPM
DATE:       1- 1-1980               PERIOD:      PM
============================================================================
TOTAL VOLUMES:

                             N-S ST: INDUSTRIAL

                                0 1751  487
                                |   |    |
                              <--   V    -->
                            .                 .
    / \                     |                 |
     |                  0 --                  --  146
     |
   NORTH                0 -->   NO. PHASES: 4   <--    0

                        0 --                  --  318
                            |                 |
                            V                 V  E-W ST:
                                                 TENNYSON
                              <--   .    -->
                                |   |    |
                                0 1753 1049
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	2	875	1	487	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	1	232	1	318	0	0	0	0
NB	0	0	1	1401	0	0	1	1401	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB				EB		WB		TOTAL
MOVEMENT	T		L				T		L		
VOLUME	1401	+	487		+		0	+	318	=	2206

==

VOLUME TO CAPACITY RATIO (V/C) = 1.60
INTERSECTION LEVEL OF SERVICE (LOS) = F

==

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS
JOB NO.: 5004-03
TM FILE: SH4EPM.VOL
GEO FILE: SHOR.GEO
DATE: 1- 1-1980

N-S STREET: INDUSTRIAL
E-W STREET: BAUMBERG
RECORD NO.: 6
CONDITION: SH4EPM
PERIOD: PM

TOTAL VOLUMES:

```
                         N-S ST: INDUSTRIAL
                          694 1310    1
                           |    |     |
                          <--   V    -->
                     ^                       ^
   / \               |                       |
    |          1986 --                       --    3
    |
  NORTH         106 -->   NO. PHASES: 4    <--    20

                499 --                       --    9
                     |                       |
                     V                       V   E-W ST:
                                                 BAUMBERG
                          <--   ^    -->
                           |    |     |
                           95  587   84
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	1	1002	1	1	1	1002	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	1	32
NB	0	0	1	335	1	95	1	335	0	0	0	0	0	0
EB	1	499	1	106	2	993	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB	SB		EB	WB		TOTAL
MOVEMENT	L	T		L	T		
VOLUME	95	+1002	+	993	+ 32	=	2122

VOLUME TO CAPACITY RATIO (V/C) = 1.54
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	HESPERIAN
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH4EPM.VOL	RECORD NO.:	7
GEO FILE:	SHOR.GEO	CONDITION:	SH4EPM
DATE:	1- 1-1980	PERIOD:	PM

TOTAL VOLUMES:

```
                              N-S ST: HESPERIAN
                                 65  680  282
                                  |   |    |
                                <--   V    -->
                          ^                         ^
   / \                    |                         |
    |              143  --                          --  424
    |
  NORTH           2708 -->    NO. PHASES: 8    <--  999

                  1485  --                          --  238
                          |                         |
                          V                         V  E-W ST:
                                                       INDUSTRIAL
                                <--   ^    -->
                                  |   |    |
                                534  535  237
```

LANE GEOMETRIES AND VOLUMES:

	TURNING MOVEMENT R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	65	2	340	1	282	0	0	0	0	0	0	0	0
WB	0	0	1	711	1	238	1	711	0	0	0	0	0	0
NB	0	0	1	386	2	267	1	386	0	0	0	0	0	0
EB	1	1485	2	1354	1	143	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	386	+	282	+	1354	+	238	=	2260

VOLUME TO CAPACITY RATIO (V/C) = 1.64
INTERSECTION LEVEL OF SERVICE (LOS) = F

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME: SHORELANDS	N-S STREET: 17 WEST
JOB NO.: 5004-03	E-W STREET: INDUSTRIAL
TM FILE: SH4EPM.VOL	RECORD NO.: 8
GEO FILE: SHOR.GEO	CONDITION: SH4EPM
DATE: 1- 1-1980	PERIOD: PM

TOTAL VOLUMES:

```
                             N-S ST: 17 WEST

                                467    0  240
                                 |     |   |
                                <--    V   -->
                          .                          .
  / \                     |                          |
   |                 0  --                          --     0
   |
 NORTH            2370  -->     NO. PHASES: 4      <--  1194

                  1672  --                          --     0
                          |                          |
                          V                          V   E-W ST:
                                                         INDUSTRIAL
                                <--     .    -->
                                  |     |    |
                                  0     0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	467	0	0	2	120	0	0	0	0	0	0	0	0
WB	0	0	2	597	0	0	0	0	0	0	0	0	0	0
NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EB	1	1672	2	1185	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		T		L		
VOLUME	0	+	120	+	1185	+	0	=	1305

VOLUME TO CAPACITY RATIO (V/C) = .95
INTERSECTION LEVEL OF SERVICE (LOS) = E

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME:	SHORELANDS	N-S STREET:	17 EAST
JOB NO.:	5004-03	E-W STREET:	INDUSTRIAL
TM FILE:	SH4EPM.VOL	RECORD NO.:	9
GEO FILE:	SHOR.GEO	CONDITION:	SH4EPM
DATE:	1- 1-1980	PERIOD:	PM

===

TOTAL VOLUMES:

```
                          N-S ST: 17 EAST
                                  ---------------

                              0    0    0
                              |    |    |
                             <--   V    -->
                         ^                    ^
   / \                   |                    |
    |           1059 --                       --  230
    |
  NORTH         1608 -->   NO. PHASES: 4   <--   697

                   0 --                       --    0
                         |                    |
                         V                    V  E-W ST:
                                                 INDUSTRIAL
                             <--   ^    -->      ------------
                              |    |    |
                             516   0    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	1	230	2	348	0	0	0	0	0	0	0	0	0	0
NB	1	0	0	0	2	258	0	0	0	0	0	0	0	0
EB	0	0	2	1333	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	258	+	0	+	1059	+	348	=	1665

===

VOLUME TO CAPACITY RATIO (V/C) = 1.21
INTERSECTION LEVEL OF SERVICE (LOS) = F

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	INDUSTRIAL
JOB NO.:	5004-03	E-W STREET:	SHROELANDS
TM FILE:	SH4EPM.VOL	RECORD NO.:	10
GEO FILE:	SHOR.GEO	CONDITION:	SH4EPM
DATE:	1- 1-1980	PERIOD:	PM

TOTAL VOLUMES:

```
                         N-S ST: INDUSTRIAL

                          48 1633    0
                           |   |     |
                          <--  V     -->
                     .                     .
  / \                |                     |
   |            30 --                      --    0
   |
 NORTH           0 -->  NO. PHASES: 5  <--       0

              2560 --                      --    0
                     |                     |
                     V                     V  E-W ST:
                                              SHROELANDS
                          <--    .    -->
                           |     |     |
                         1059   578    0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	1	48	3	544	0	0	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NB	0	0	3	192	2	529	0	0	0	0	0	0	0	0
EB	2	1280	0	0	2	15	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		L		T		
VOLUME	529	+	544	+	15	+	0	=	1088

VOLUME TO CAPACITY RATIO (V/C) = .79
INTERSECTION LEVEL OF SERVICE (LOS) = C

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	BAUMBERG
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH4EPM.VOL	RECORD NO.:	11
GEO FILE:	SHOR.GEO	CONDITION:	SH4EPM
DATE:	1- 1-1980	PERIOD:	PM

TOTAL VOLUMES:

```
                              N-S ST: BAUMBERG

                                381  125  146
                                 |    |    |
                                <--   V   -->
                            ^                     ^
   / \                      |                     |
    |               808    --                     --    57
    |
  NORTH            1489   -->   NO. PHASES: 5   <--    853

                     18    --                     --   147
                            |                     |
                            V                     V  E-W ST:
                                                     SHORELANDS
                                <--   ^   -->
                                 |    |    |
                                149  427  840
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	381	2	62	1	146	0	0	0	0	0	0	0	0
WB	1	57	3	284	2	73	0	0	0	0	0	0	0	0
NB	1	840	2	213	2	74	0	0	0	0	0	0	0	0
EB	1	18	3	496	2	404	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	213	+	146	+	404	+	284	=	1047

VOLUME TO CAPACITY RATIO (V/C) = .76
INTERSECTION LEVEL OF SERVICE (LOS) = C

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

===

JOB NAME: SHORELANDS — N-S STREET: ENTRANCE
JOB NO.: 5004-03 — E-W STREET: SHORELANDS
TM FILE: SH4EPM.VOL — RECORD NO.: 12
GEO FILE: SHOR.GEO — CONDITION: SH4EPM
DATE: 1- 1-1980 — PERIOD: PM

===

TOTAL VOLUMES:

```
                              N-S ST: ENTRANCE

                                 0    0    0
                                 |    |    |
                               <--    V    -->
                           ^                     ^
   / \                     |                     |
    |                 0 --                       --    0
    |
  NORTH            1570 -->   NO. PHASES: 5   <-- 1170

                    257 --                       --   69
                           |                     |
                           V                     V  E-W ST:
                                                    SHORELANDS
                               <--    ^    -->
                                 |    |    |
                              1105    0  327
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R GEO	R VOL	T GEO	T VOL	L GEO	L VOL	R+T GEO	R+T VOL	T+L GEO	T+L VOL	R+L GEO	R+L VOL	R+T+L GEO	R+T+L VOL
SB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WB	0	0	3	390	2	34	0	0	0	0	0	0	0	0
NB	2	163	0	0	2	552	0	0	0	0	0	0	0	0
EB	1	257	3	523	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	L		T		T		L		
VOLUME	552	+	0	+	523	+	34	=	1109

===

VOLUME TO CAPACITY RATIO (V/C) = .81
INTERSECTION LEVEL OF SERVICE (LOS) = D

===

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

JOB NAME:	SHORELANDS	N-S STREET:	EDEN LANDING
JOB NO.:	5004-03	E-W STREET:	SHORELANDS
TM FILE:	SH4EPM.VOL	RECORD NO.:	13
GEO FILE:	SHOR.GEO	CONDITION:	SH4EPM
DATE:	1- 1-1980	PERIOD:	PM

TOTAL VOLUMES:

```
                          N-S ST: EDEN LANDING

                              201   140   623
                               |     |     |
                              <--    V    -->
                         ^                       ^
   / \                   |                       |
    |             185 --                          -- 1506
    |
  NORTH           889 -->    NO. PHASES: 5    <--  110

                   11 --                          --  101
                         |                       |
                         V                       V  E-W ST:
                                                    SHORELANDS
                              <--    ^    -->
                               |     |     |
                               20   140   101
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	1	201	2	70	2	311	0	0	0	0	0	0	0	0
WB	1	1506	3	36	1	101	0	0	0	0	0	0	0	0
NB	1	101	1	140	2	10	0	0	0	0	0	0	0	0
EB	1	11	3	296	1	185	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	T		L			T		L		
VOLUME	140	+	311	+		296	+	101	=	848

VOLUME TO CAPACITY RATIO (V/C) = .62
INTERSECTION LEVEL OF SERVICE (LOS) = B

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

```
===========================================================================
JOB NAME:  SHORELANDS                N-S STREET: SHORELANDS
JOB NO.:  5004-03                    E-W STREET: 92 SOUTH
TM FILE:  SH4EPM.VOL                 RECORD NO.: 14
GEO FILE: SHOR.GEO                   CONDITION:  SH4EPM
DATE:       1- 1-1980                PERIOD:     PM
===========================================================================
TOTAL VOLUMES:

                         N-S ST: SHORELANDS
                                 ----------------
                             0   501    0
                             |    |     |
                          <--     V     -->
                      ^                       ^
  / \                 |                       |
   |            485 --                        --     0
   |
 NORTH            0 -->   NO. PHASES: 2   <--        0
 -----
                452 --                        --     0
                      |                       |
                      V                       V  E-W ST:
                                                 92 SOUTH
                          <--     ^     -->      ----------------
                             |    |     |
                             0 1360     0

---------------------------------------------------------------------------
LANE GEOMETRIES AND VOLUMES:
```

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	250	0	0	0	0	0	0	0	0	0	0
WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NB	0	0	2	680	0	0	0	0	0	0	0	0	0	0
EB	1	452	0	0	2	242	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB		EB		WB		TOTAL
MOVEMENT	T		L		L		T		
VOLUME	680	+	0	+	242	+	0	=	922

```
===========================================================================
VOLUME TO CAPACITY RATIO (V/C) =  .61
INTERSECTION LEVEL OF SERVICE (LOS) = B
===========================================================================
```

OMNI-MEANS LTD. SIGNALIZED INTERSECTION CAPACITY ANALYSIS

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JOB NAME:  SHORELANDS                 N-S STREET: SHORELANDS
JOB NO.:   5004-03                    E-W STREET: 92 NORTH
TM FILE:   SH4EPM.VOL                 RECORD NO.: 15
GEO FILE:  SHOR.GEO                   CONDITION:  SH4EPM
DATE:       1- 1-1980                 PERIOD:     PM
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TOTAL VOLUMES:

```
                        N-S ST: SHORELANDS

                             0    0    0
                             |    |    |
                          <--     V    -->
                       ^                    ^
   / \                 |                    |
    |              0 --                     --  845
    |
  NORTH            0 -->  NO. PHASES: 2  <--      0

                   0 --                     --  501
                       |                    |
                       V                    V  E-W ST:
                                               92 NORTH
                          <--     ^    -->
                            |     |    |
                            0 1450     0
```

LANE GEOMETRIES AND VOLUMES:

TURNING MOVEMENT

	R		T		L		R+T		T+L		R+L		R+T+L	
	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL	GEO	VOL
SB	0	0	2	0	0	0	0	0	0	0	0	0	0	0
WB	1	845	0	0	2	250	0	0	0	0	0	0	0	0
NB	0	0	2	725	0	0	0	0	0	0	0	0	0	0
EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CRITICAL VOLUMES:

APPROACH	NB		SB			EB		WB		TOTAL
MOVEMENT	T		L			T		L		
VOLUME	725	+	0	+		0	+	250	=	975

==

VOLUME TO CAPACITY RATIO (V/C) = .65
INTERSECTION LEVEL OF SERVICE (LOS) = B

==

APPENDIX C

HISTORY OF THE BAUMBERG TRACT

HISTORICAL GEOGRAPHY OF THE BAUMBERG TRACT, HAYWARD, CALIFORNIA

by

Donald G. Holtgrieve Ph.D

for

Cole-Mills Associates
Martinez, California

January 1986

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INTRODUCTION

This historical-geographic summary of the area in Hayward, California, known as the Baumberg Tract, is intended to familiarize readers with what is known about the prehistoric landscape of the area, the process of initial settlement and land use, navigation of local waterways, the process of salt works construction and operation, and subsequent land use changes to the present. It does not include archaeologic or ethnographic information about prehistoric occupance of the area.

Rather than presenting a narrative of events, the manner of presentation used here is to discuss each topic by referring to and abstracting the contents of selected documents including government reports, published materials, newspaper accounts, maps, and unpublished file material. More detail for each of the topics introduced may be obtained by consulting the references cited.

PRE 1857 CONDITIONS

The earliest reported improvements made on lands near the Baumberg tract in the Mt. Eden area of Alameda County were cited in 1897 by the Eighteenth Annual Report of the United States Geological Survey wherein a pioneer settler, A.A. Oliver recalled that natural ponds or "sinks" occurred along the shore. These ponds retained bay water from the highest spring tides and evaporated in the summer leaving salt crystals to be gathered by hand. In 1853 John Johnson was reported to have purchased land in the vicinity of the present Hayward Regional Shoreline where he constructed levees and sold his harvested salt for $50.00 per ton (Parker, 1897).

One of the only accurate maps of the East Bay shoreline drawn before 1857 was prepared under the direction of Captain Beechey of the Royal Navy in the 1840's . It merely indicated the line of low water and the location of oyster beds and mud flats (see Figure A.G.1). Descriptions of higher lands were not given (Beechey, 1846). Another early U.S. Navy map was prepared by the the crew of Commander Cudwalader Ringgold in 1851 (Ringgold, 1851, see Figure A.G.2). It showed three creeks flowing through a marshland in the area that is best identified as present day Hayward.

THE HYDROGRAPHIC AND TOPOGRAPHIC SURVEYS

The California State Lands Commission has on file copies of the earliest official survey maps of California coastal areas prepared by the U.S. Coast Survey and its successor, the U.S. Coast and Geodetic Survey (this agency is now called the National Ocean Service.) They are Topographic and Hydrographic charts which were prepared at various times between the 1850's and the

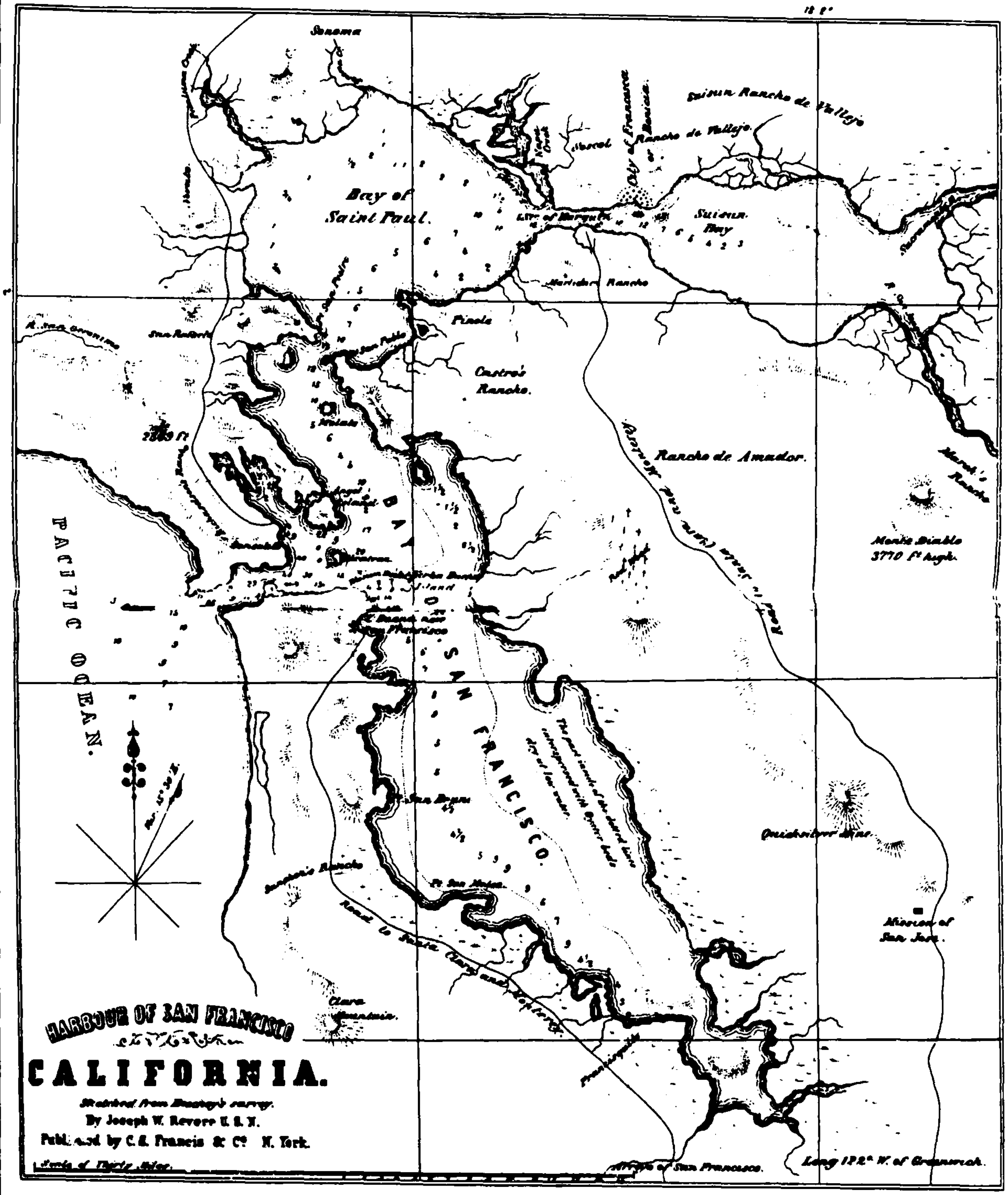


Figure A.C.1. Drawn from sketches by Captain Beechey, 1846

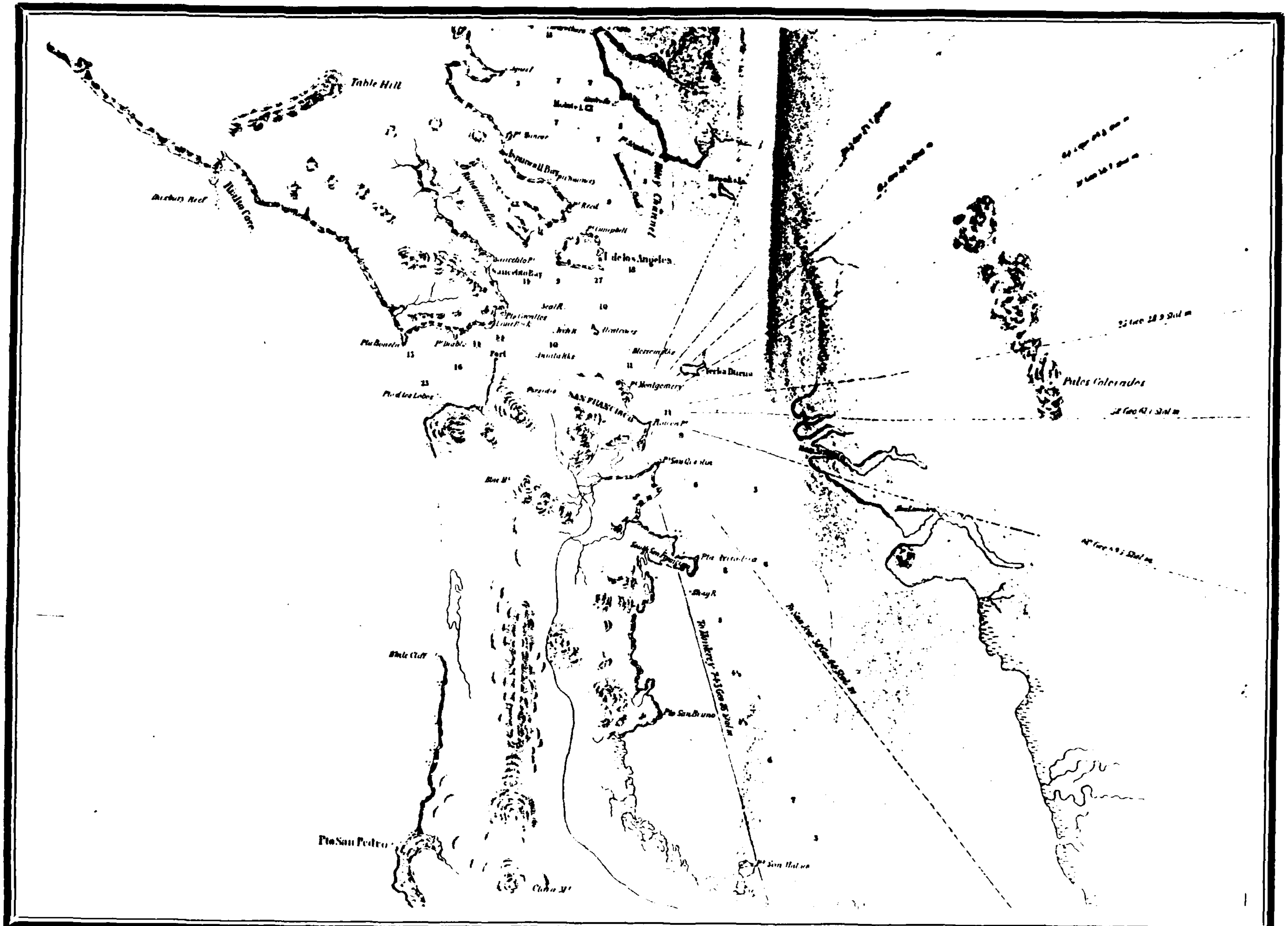


Figure A. .2. Map by Commander Ringgold, 1851.

present. Some had accompanying written "descriptive reports" which presented information not possible to show graphically.

For the East Bay area at the Baumberg Tract, the survey maps are (T=topographic; H= hydrographic):

Register No.	Date	Scale	Descriptive Report
T-635	1857	10,000	No
T-2252	1896	10,000	Yes
T-4604	1931	10,000	Yes
T-4649	1931	10,000	Yes
T-11070	1952	10,000	Yes
H-628	1857-1858	20,000	Letter in file
H-638	1858	10,000	No
H-2304	1897	20,000	Yes
H-5131	1931	10,000	Yes
H-8210	1956	10,000	Yes

THE 1857 SURVEY

The U.S. Coast Survey topographic sheet T-635 dated 1857 shows the Hayward shoreline area with three creeks flowing out of marshland (Figure A.G.3). Eden Creek (labeled as Union City Creek) is shown transecting the present study area with Allen's Landing and Eden Landing identified (USCGS, 1857). Both landings are symbolized with buildings and roads leading to them. Except for triangulation stations, no other man-made structures or roads are shown within those portions of the map depicted as marshlands. The Hydrographic sheet, H-638, shows similar information, and indicates soundings (water depths) as far inland as Eden Landing (Figure A.G.4).

There was no descriptive report written for these maps, but in 1931, the Chief of the C&GS Division of Tides and Currents wrote concerning the tidal datum on the charts:

> Since the datums used in these old surveys have not been preserved through bench marks, the exact relations between the old (tidal) planes and the planes in use today cannot be determined.

The letter goes on to state that at certain tidal survey points, the tidal planes appear to be correct within the "allowable" error of 0.3 foot, but that the reducer at one point may be in error by as much as one foot (Dedrick, 1974).

In 1971 the U.S. Geological Survey compiled a map entitled Preliminary Map of Historic Margins of Marshland, San Francisco Bay, California from many of the earliest Coast and Geodetic

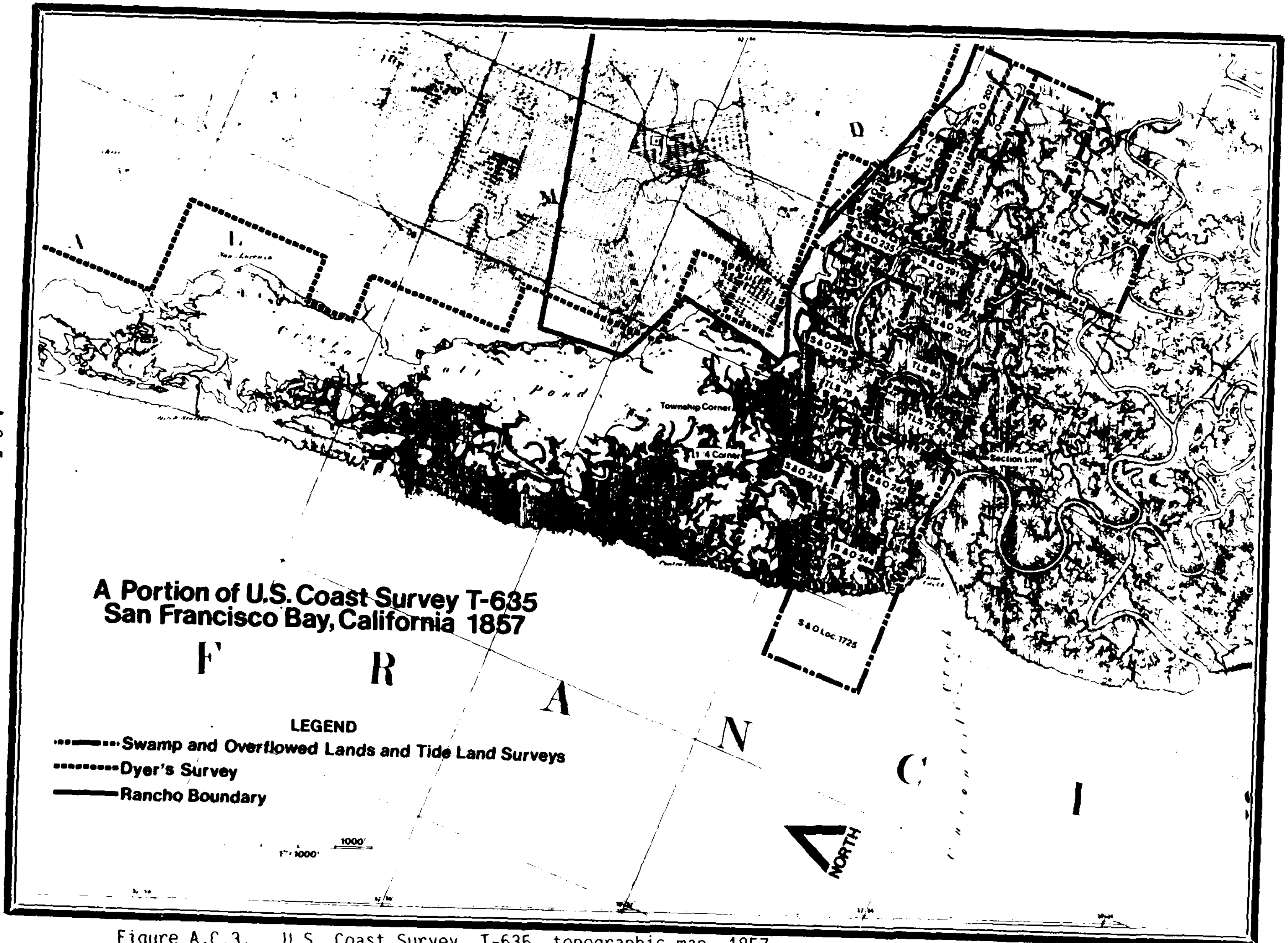


Figure A.C.3. U.S. Coast Survey, T-635, topographic map, 1857.

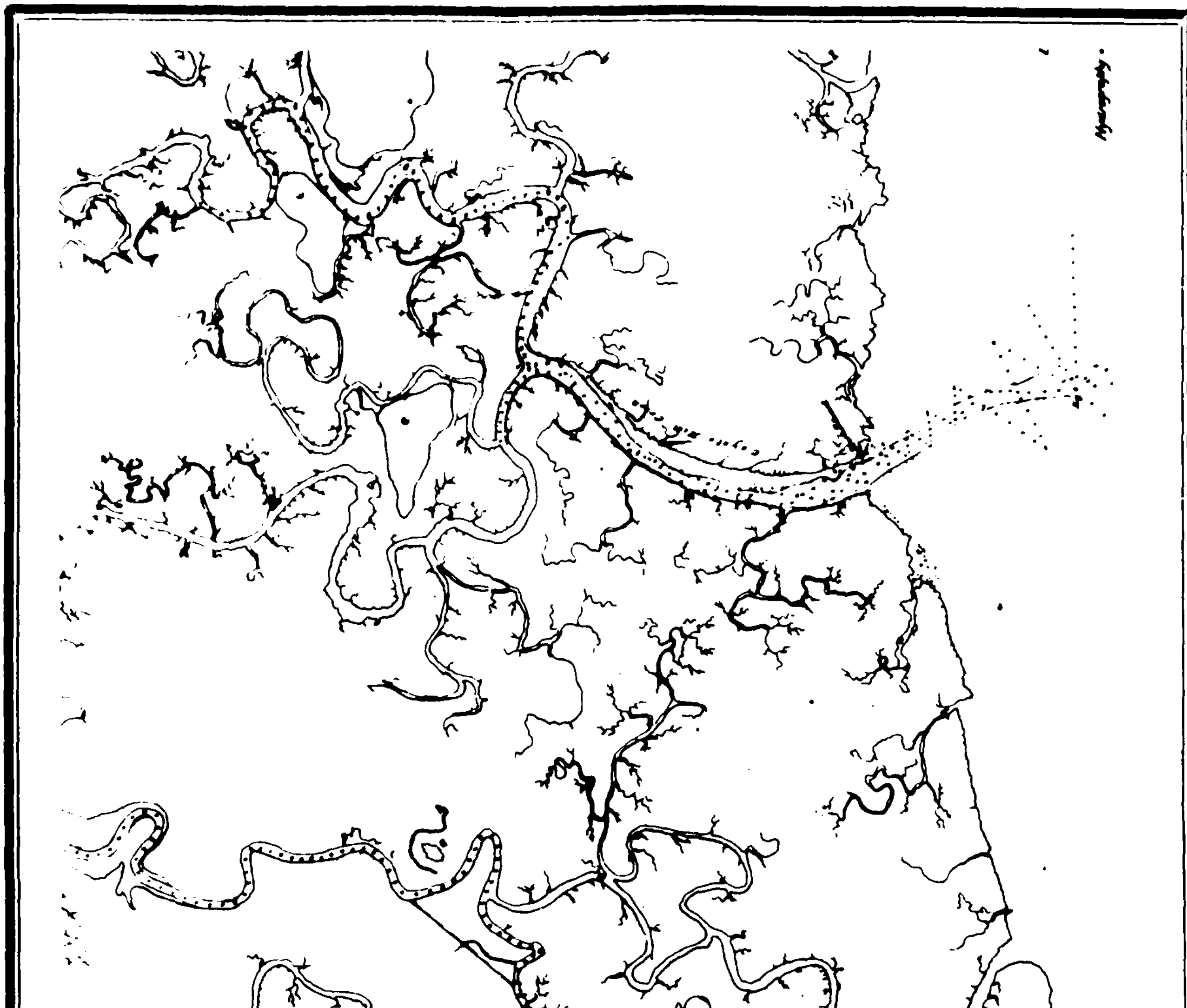


Figure A.C.4. U.S. Coast Survey Hydrogrphic Chart, H-638, 1858.

Survey maps (Nichols and Wright, 1971). This map shows the historic sloughs and creeks mapped on T-635 overlain on a modern USGS base map (Figure A.G.5). Identification of present local features in relation to historical features is possible with this overlay.

THE NINETEENTH CENTURY LANDSCAPE, 1857-1898

A descriptive although opinionated verbal picture of the nineteenth century east bay shoreline was published in the Over land Monthly in 1871 (Farley, 1871). It reported:

> When the creeks have their normal water-flow, it (the region) is a dreary waste of green, with here and there a pool of muddy and unpoetic water, covered with flocks of ducks of various colors, and with flocks of wild geese of both white and gray varieties.
>
> A singular plant clothes this border, and is characteristic of all is sections. It is of two varieties; one, a shrub of a light, dirty-green color, ranging from a foot and a half to three feet, high and undoubtedly the least indigenous product of the soil; the other, a branchless, leafless, almost lifeless plant, of a somewhat darker green, hardly ever reaching beyond a foot in height, and belonging, evidently, to an intermediate stage of the formation. The two plants are locally known by the common name of "salt-weed".

Navigation

Mt. Eden Creek was navigable by commercial bay vessels at least to Allen's and Eden Landing in 1857 when the area was first surveyed and continued to be open to Bay traffic for a few decades. Allen's Landing was located about one hundred yards downstream from the present end of Eden Landing Road and the original Eden Landing was located 100 yards upstream to the east of the present road end. Landings in this vicinity are noted on almost all nineteenth century maps of the area and are described and pictured in both published and unpublished documents.

The mouth of the slough was about three and one-half miles from the deep water channel of the bay and the general area called Eden Landing was about three miles inland from the mouth.

Journalist-Historian John Sandoval noted in his newspaper column that Henry Peterman operated a store, a saltworks and a small steamer named the Emma which hauled barges loaded

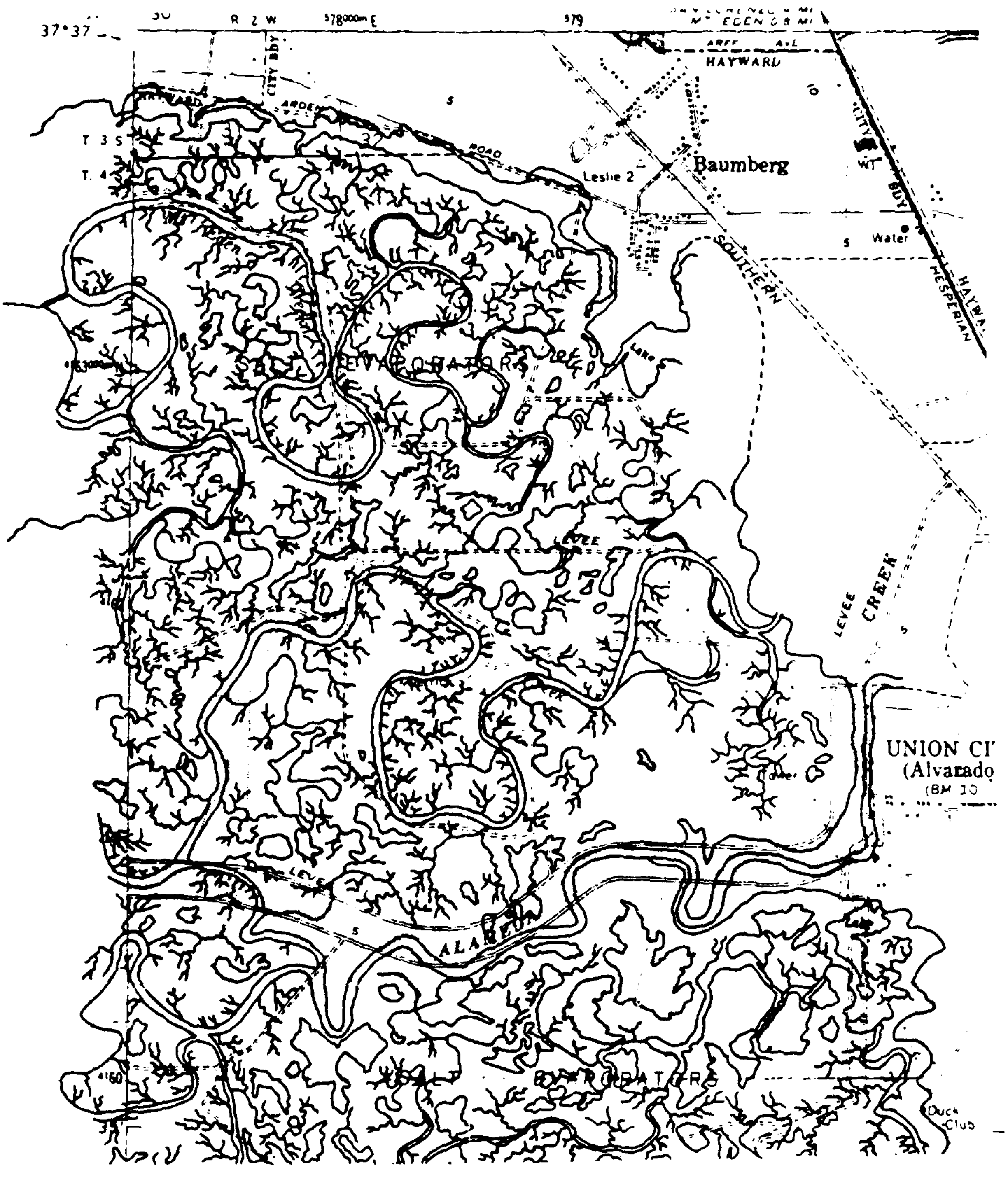


Figure A.C.5. Historic Sloughs mapped by U.S. Coast Survey, T-635, overlay on USGS base, after Nichols and Wright, 1971.

with bailed hay and grain from Eden Landing, Hayward Landing and Johnson's Landing to San Francisco's waterfront. "At high tide the slough channels were used (there was a 6-foot maximum depth at high tide) and the tugs and barges cured their way through the marshes to deep bay water (Sandoval, 11-10-74).

In another column Sandoval described the landings shown on a map prepared by the Dumbarton Land and Improvement Company sometime between 1895 and 1900 (Sandoval, 11-24-74; see Figure A.G.6). This map labels Eden Landing as Peterman Landing and shows three buildings located about 100 yards apart (Dumbarton, 1895). The center building of the three is at the location of the present end of Eden Landing Road. Salt works are shown adjacent to Eden Creek. Three of these salt works, Liguori (part of Ligouri appears to have been served by a road, see T-2252, Figure A.G.7), Ohlson and Commercial Salt Company, appear to have no access by road and show their crystalizer ponds next to Eden Creek or its tributaries thereby suggesting shipment of salt by water.

On the 1857 map Mt. Eden Creek is shown as connected to North Creek (unnamed), which in turn, joins Coyote Hills Creek (Alameda Creek). North Creek was used in high water to reach the above mentioned salt works and the stock pen described in the Archaeology section of this report. Alden Oliver recalled in 1983 that he learned from his father that North Creek was connected to Alameda Creek in the early 1900's and was leveed to Eden Creek at about that time (Oliver, 1983).

North Creek is described as the North Branch of Alameda creek in the 1897 "Descriptive Report for USC&GS hydrographic Survey No. H-2304 (1897) for the Eastern Shore of San Francisco Bay from Robert's Landing to Newark Slough as:

> About 2.1 miles from the mouth the slough forks into two branches, one making to S.Ed. to Union City, and following the course of old Union City Creek, the other branch making to the Nd., and through which now flow the waters of Alameda Creek.
>
> Alameda Creek or North Slough as the branch to the Nd. is called is narrow, of regular depth, bottom of stiff mud or clay, and considerably deeper than main slough. There is a small Salt Works 1.9 miles from the fork, past which there is little or no navigation, though the steam launch drawing 3.0 feet was able to get up 3.6 miles from the fork, where the creek narrowed to 12 feet in width, and 4 1/2 deep at high water, through here the launch could make no progress under her own steam...(Account of Lt.N. A. McCully, Westdahl, 1896).

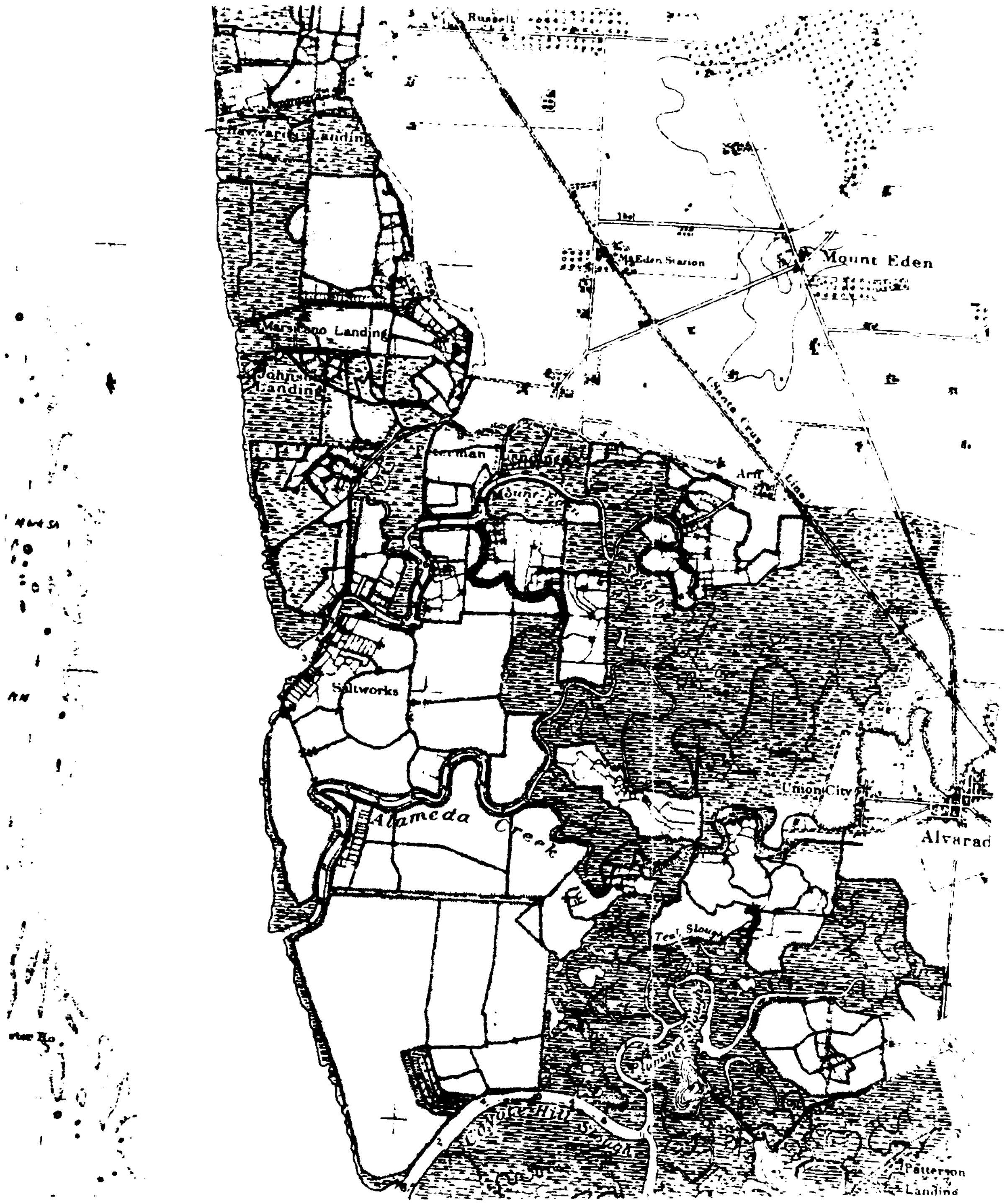
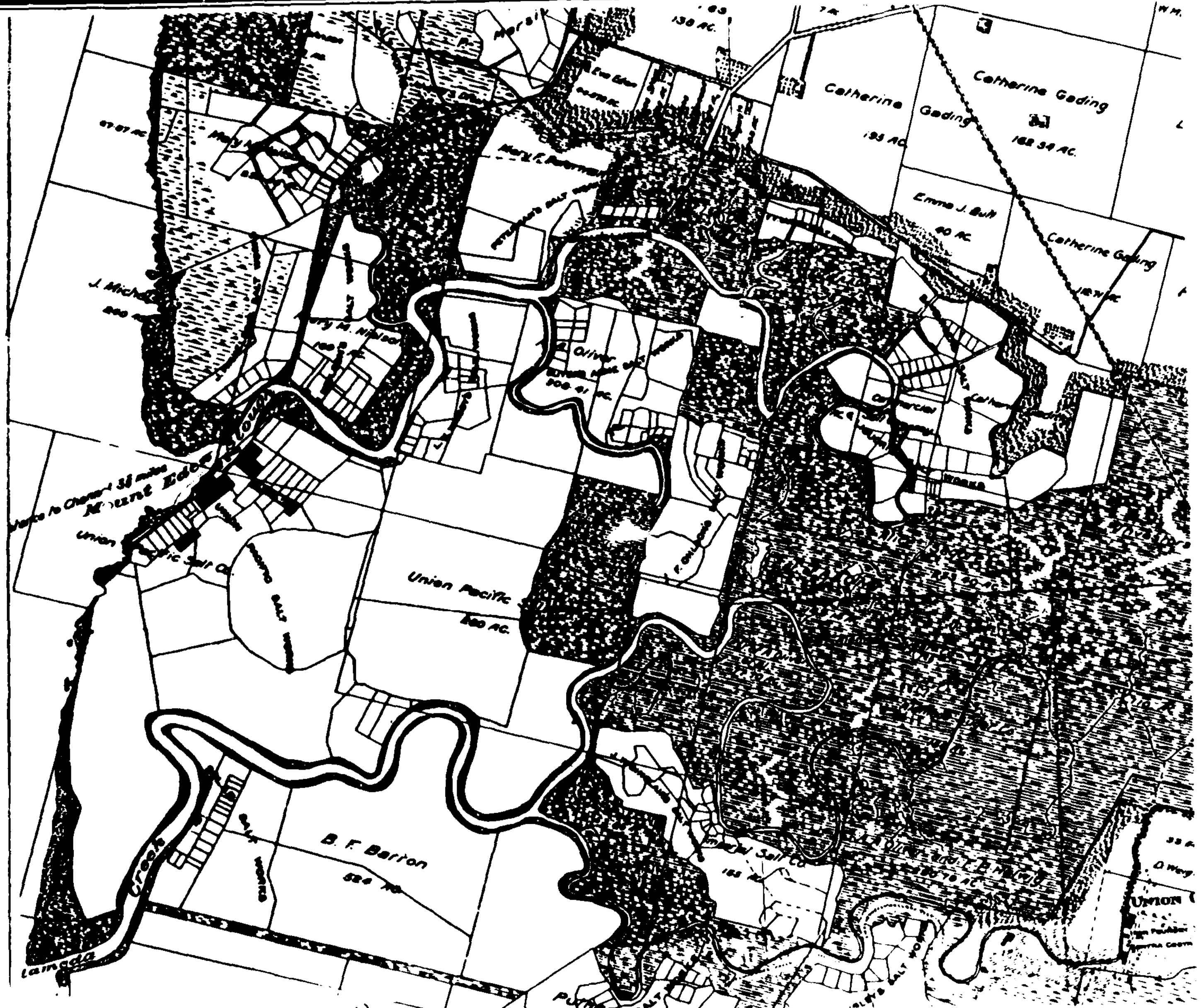


Figure A.C.6. Prepared by the Dumbarton Land and Improvement Company, 1985.



SCALE - 1:19,200 (1"=1600')

Figure A.C.7. U.S. Coast Survey, topographic map, T-2252, 1896.

A generalized and fairly inaccurate map published by Thompson and West in 1878 shows one road with three buildings at Eden Landing and shows the owner as Richard Barron (Thompson and West, 1878, p.40; see Figures A.G.8 and A.G.9). The place was sometimes referred to as Barron's Landing in contemporary newspaper ads.

Navigation to Eden Landing was described in 1897 by the Hydrographic Survey Descriptive Report as follows:

> About 1.5 miles from the mouth [Mt. Eden Creek] are the salt works of the Oliver Salt Company, and 1.8 miles from the mouth is the landing, called on the chart Allen's Landing but now known as Eden Landing. The landing called Mt. Eden Landing on the chart is no longer used. The course of the slough has somewhat changed, two loops having been cut off by ditching across, and another near the head of navigation has been ditched across but the course of the slough has not been fully diverted into this channel as yet. The head of navigation is reached about 3.0 miles from the mouth, and the usual type of craft drawing 5.0 (feet) loaded can get up to this point.
>
> Most of the traffic is by means of the usual type of sailing craft that navigate the sloughs. A small stern wheel steamer runs to Mt. Eden Landing (Westdahl, 1896).

Navigability is not mentioned in later descriptive reports of East Bay sloughs nor is Eden Creek specifically mentioned (Dedrick, 1974).

Reclamation

There is little documentation of specific reclamation practices and procedures in the vicinity of the study area properties. However, a 1971 report prepared by Claire Lopez for Leslie Salt Company (Lopez,1971) notes that the major properties reclaimed for agriculture were south of Alameda Creek, mostly for the Dumbarton Land and Improvement Company. Those to the north were generally used for salt production. By 1971, however, "Except for a few scattered small parcels, over 3000 acres of south Alameda County originally reclaimed or partly reclaimed for agriculture are presently used as salt ponds"(Lopez p.17). Using Ver Plank as his main source, Lopez records that:

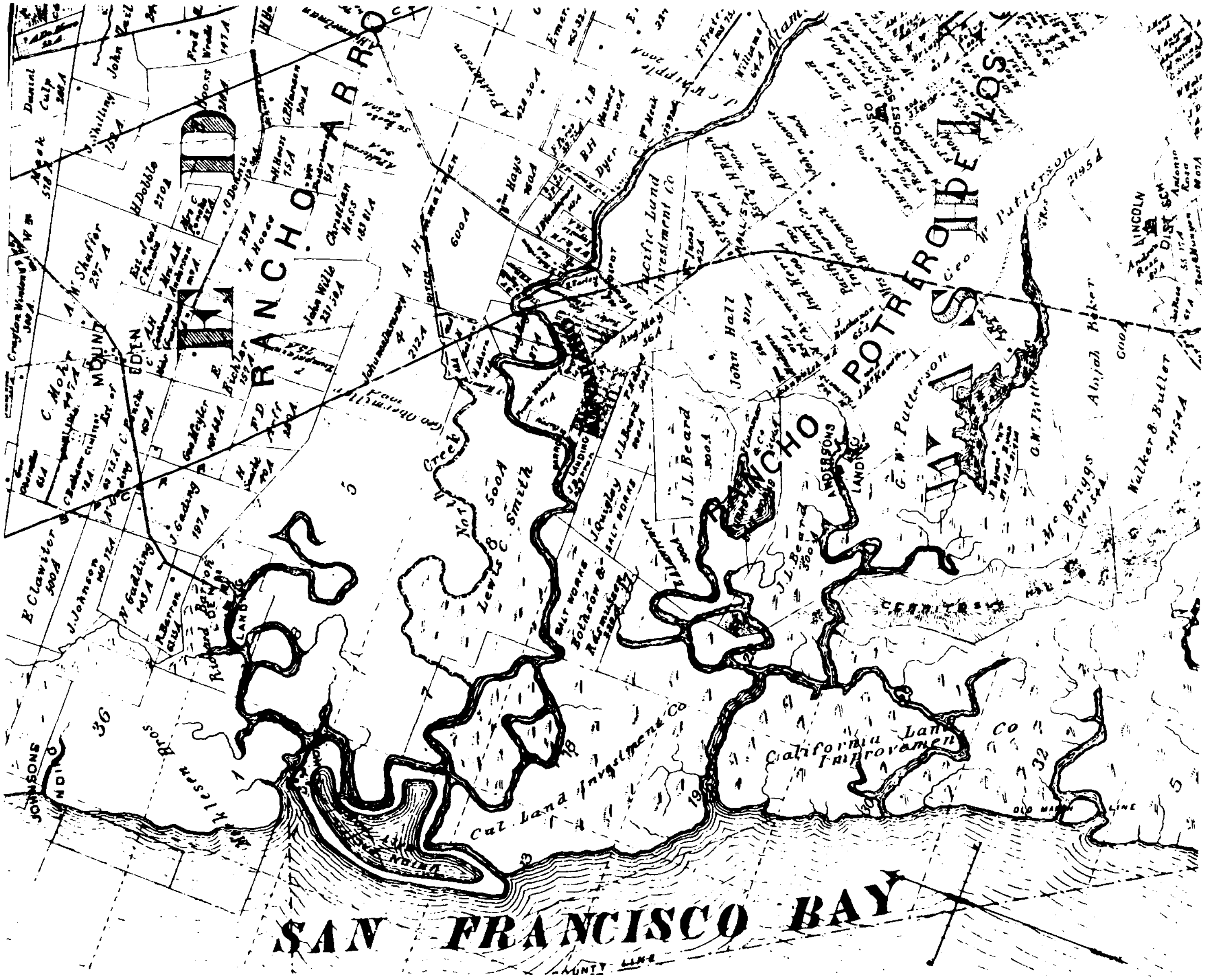


Figure A.C.8. Topographic Map, Thompson and West, 1878.

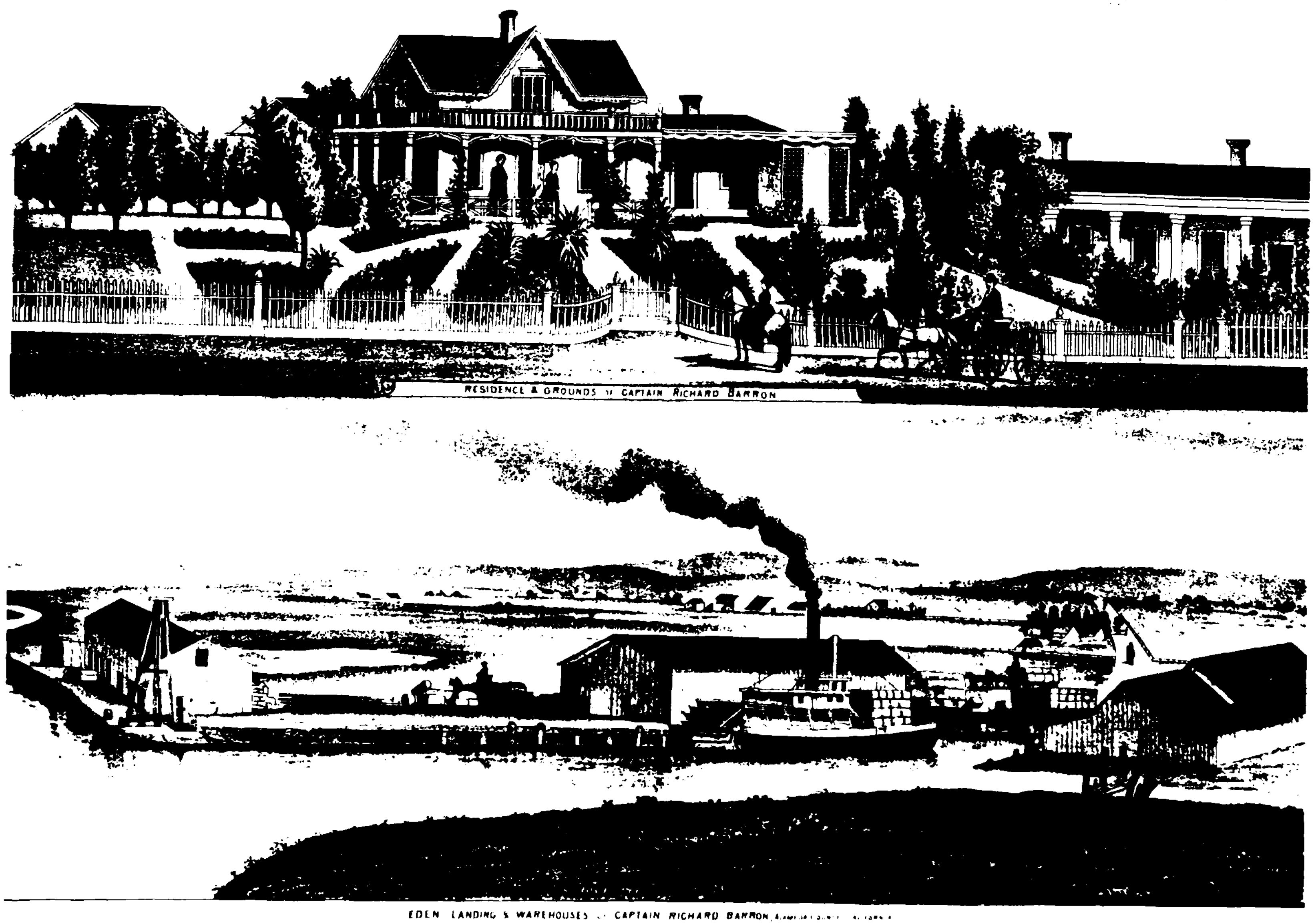


Figure A.C.9. Eden Landing, Thompson and West, 1878.

> ...by 1870 most of the Hayward Landing marshes were reclaimed and the industry had spread southerly to the marshes near Mt. Eden and Alvarado. From the first small unit the industry had grown to over 17 solar salt producers (Lopez p.29).
>
> The industry grew until by 1900 practically all the marshland from Hayward Landing on the north and extending south to Alameda Creek were reclaimed for solar salt ponds(Lopez p.29).

The first method of reclamation used in the area was the blocking of natural stream channels by hand filling mostly with the use of Chinese labor. The next logical step was the construction of levees around low lying basins also by means of digging out the marsh mud and grass and placing it in blocks along the boundaries of the basins. Ditches were aligned parallel to the levees and across the basins for drainage. Most of the ditches were connected to tide gates. In many cases, such as with lands along San Mateo Creek (Manson, 1898) and Alameda Creek (Pressler, 1972) including the present Baumberg property, flood waters were used to drain salt from the soil for agriculture or to lay deposits of silt on the pond bottoms for leveling and ease of salt harvesting operations.

The descriptive report for the 1896 topographic survey T-2252 (Figure A.G. 7 .) describes the state of land reclamation in the Mt. Eden Creek area in the context of explaining the salt industry operations at the time.

> The pickle ponds are prepared by removing all the grass and grass roots from the marshland and smoothing the the clayey subsoil. Small trenches are dug for admitting the pickle from the reservoirs and for drawing off the bittern surface water remaining after crystalization is effected. The dykes are not very substantial, about three feet in height over the marsh and about two feet on top, constructed of material dug up along side of them, thus forming a ditch on either side.
>
> In the older salt works the pickle ponds were merely slightly improved natural salt ponds and the dykes followed the windings of sloughs to avoid the expense of damming these natural arteries. In later years, however, more capital has been invested in this industry and dykes built in straight lines across both large and small sloughs. When for some reason the reservoirs are not in continuous use they soon become overgrown with marsh grass (Westdahl, 1896).

By the 1880's steam dredges were introduced into reclamation operations both in the Bay shorelines and in the Sacramento River delta country. The only engineers who were involved in these operations who seem to have left records of this work were Otto Von Geldren and Marsden Manson, both of whom worked for the Dumbarton Land and Improvement Company at the turn of the century.

In a letter to the Board of Directors of the Dumbarton Land Company in 1905 Manson gave the following prescription for reclaiming the area at Dumbarton Point:

> The levees should be about two feet above extreme high tide on the sloughs and three feet or bay frontages.
>
> The system of main ditches, inside the levees, should be 7 feet below the marsh level or 5 feet below the compressed soil.
>
> Plowing [for agriculture] should be light, not over 3 1/2 or 4 inches the first season, gradually increasing 1/2 to 1 inch deeper each succeeding season until a depth of 9 to 12 inches is attained.
>
> The plans to accomplish this work is either a clam-shell or a dipper dredge with a yard and a half or 2 yard bucket operated by oil burning boilers or gasoline and crude oil internal combustion engines (Manson, 1905).

Von Geldren, in 1913, summarized the reclamation process on the bay shoreline as follows:

> The engineering work involved in marsh land reclamation includes dredging, levee construction, ditching, drainage, sluicing, fresh water flooding, silting, leaching the salt soil, water front
>
> improvement, channel development, the building of wharves, landing accommodations, traffic roadways and many other items that bear directly upon the reclamation and its subsequent commerce (Von Geldren, 1913).

Von Geldren's most complete report on the reclamation of East Bay marshes was written in 1910 for the reclamation of Coyote Creek in Santa Clara County (Von Geldren 1910). Too lengthy to even summarize here, it details the process from preliminary surveys through drainage and levee construction to flooding and silting and finally to ultimate final uses of the property (Von Geldren, 1910). Except for the difference in final use for salt production rather than for agriculture the reclamation process used in Santa Clara and San Mateo Counties is the same as used in Alameda County in the Mt. Eden area.

Ownership

Almost all of the land in the study area was acquired by nineteenth century settlers through purchase or grants from the State of California as Tidelands or as Swamp and Overflowed lands. For the most part, the subject lands were west of the bayward boundary of Rancho Arroyo de Alameda. Figure A.G.10 shows the locations of the S & O claims and the Tideland Survey claims. Table A.G.1 lists the claimants and the dates of their applications or surveys.

The 1860 manuscript census area listed twelve households in the area who recorded farmer or salt maker as their occupations. In 1870 there were ten households listed as salt makers, ten farmers, one warehouseman, one shipper, and one ship captain. In 1880 there were twenty-six households in the area which included seven farmers, sixteen salt makers, one sailor, two shippers and three combination salt maker-farmers. [(U.S. Manuscript Census of Population, 1850, 1860, 1870, 1880). The 1890 census data available to researchers does not contain individual names and occupations of persons.]

The 1896 topographic map, T-2252, Figure A.G.7, locates twenty property owners and/or salt companies by name in the project study area. At about this time salt makers began to consolidate their operations and smaller property owners sold out to larger ones. Figure A.G.11, taken from Ver Planck, illustrates the salt production and land ownership consolidation process from about 1900 to the 1930's when the Leslie Salt Company became almost the sole owner of the project area properties.

> The series of events that eventually lead to the consolidation of nearly all the Bay Area's salt producing capacity in the hands of one organization began with the founding of three new salt producers. They were the the California Salt Company, formed in 1901; the Continental Salt and Chemical Company, organized in 1900; and the Leslie Salt and Refining Company, established in 1901 (Ver Planck, p.109).

These companies became the Leslie-California Salt Company which, in turn, absorbed the Oliver and Turk Island Salt Companies (Figure A.G.12. shows the old Oliver Salt plant). The Leslie Salt Company, formed out of these in 1936, then acquired the Arden Salt Company and became the operator of almost all salt production in the area out of its Newark and Baumberg plants. The Leslie Salt Company was acquired by the Cargill Corporation in 1978 which holds title to the majority of the project property today. A portion of the project area is the former John Johnson claim which was owned and operated for salt production by the Oliver family from 1939 to 1983. The Oliver

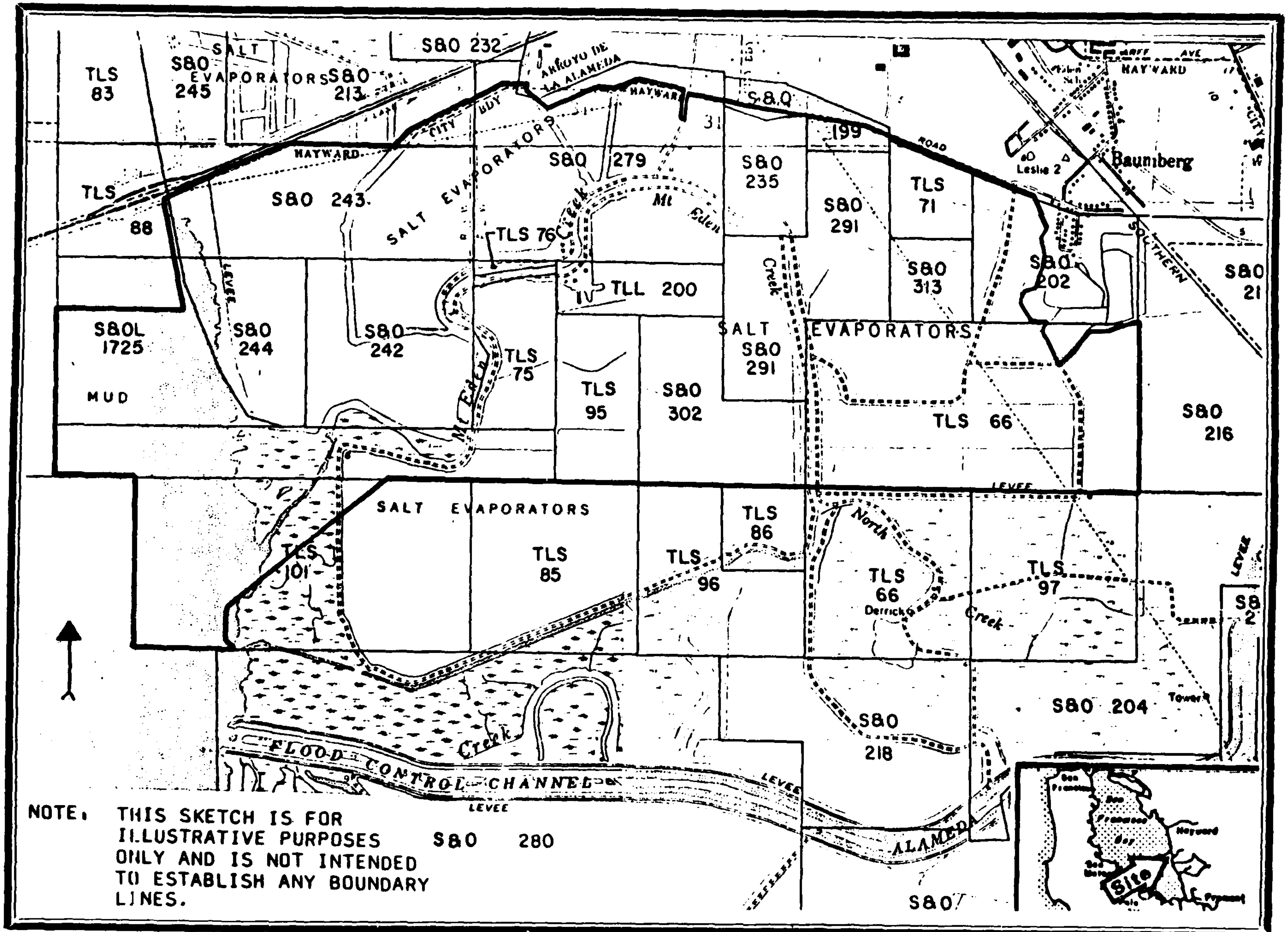


Figure A.C.10. Locations of Original Patents: S & O and Tideland Survey Claims.

Survey	Survey Date	Cert. Pur. Date	Patentee	Patent Date	Patent Rec. Date	Rec. Pat. Bk/Pg	Dispostion by State Under Statute
TLS 66	4/5/1864	1/19/1865 2/23/1871(DUP)	Sebastiano Liquore	11/29/1871	1/20/1872	A/497	4-27-1863
TLS 71	8/6/1864	10/20/1865	F. D. Arff	10/20/1865	9/22/1866	A/224	4-27-1863
TLS 75	10/7/1867	7/21/1868	Lawrence N. Whisby	2/5/1873	9/29/1873	A/563	4-27-1863
TLS 76	10/7/1867	No Record	Lawrence N. Whisby	7/20/1870	8/9/1870	A/419	4-27-1863
TLS 94 (dead)	No Date						
TLS 95	No Date	2/20/1869	A. Oliver	11/26/1888	11/30/1888	B/565	4-27-1863
TLS 101	No Date	7/14/1870	Arthur W. Jae	1/21/1874	2/6/1874	A/579	4-27-1863 & 3-28-1868
TLL 200	1/20/1898	8/5/1898	Elsa A. Oliver	8/19/1899	8/24/1899	C/186	Title 8 P.C.
S & O 199	3/18/1858	2/16/1859	Alexander Hendry	5/22/1861	10/25/1865	A/191	4-28-1855
S & O 202	6/28/1858	10/22/1858	Frederick D. Arff	5/16/1867	10/28/1867	A/234	4-28-1855
S & O 213	4/16/1859	3/3/1860	John Johnson	2/8/1866	9/27/1867	A/233	4-21-1858
S & O 235	Approved 12/24/1860	2/16/1861	Richard Barron	3/27/1877	4/21/1877	B/57	4-21-1858
S & O 242	8/26/1861	5/24/1862	Henry Koch	11/11/1867	4/13/1868	A/291	4-18-1859
S & O 243	8/26/1861	5/24/1862	Christian Bothson (Bothsow)	11/11/1867	2/11/1868	A/266	4-18-1859
S & O 244	8/26/1861	5/24/1862	Peter Michelsen	11/11/1867	2/11/1868	A/265	4-18-1859
S & O 279	3/19/1863	6/4/1863	Richard Barron	10/10/1868	10/30/1868	A/354	4-18-1859
S & O 291	No Date	Missing	E. L. Beard	3/7/1872	10/17/1883	B/440	3-28-1868
S & O 302	No Date	12/9/1870	Andrew Oliver	7/14/1876	11/10/1878	B/8	3-28-1868
S & O 313	3/27/1871	1/17/1871	Sebastian Liquore	7/24/1876	6/27/1878	B/143	3-28-1868
S & OL 1725	Located 10/31/1883	11/19/1883	John Michelsen	8/1/1888	11/19/1888	B/155	Title 8 P.C.

Table A.C.1. Claimants and Dates of Surveys and Applications.

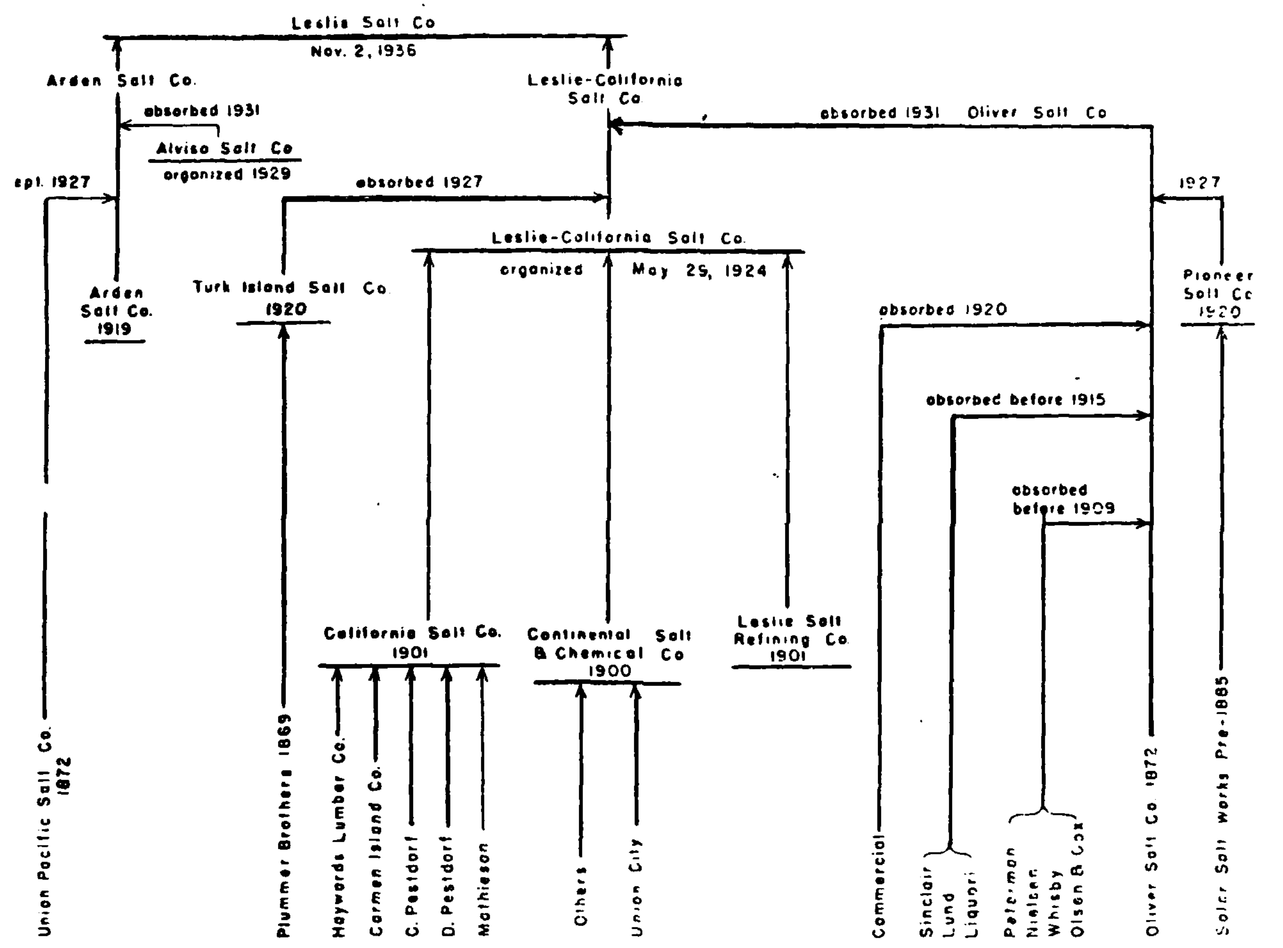


FIGURE 2. Chart illustrating consolidation of San Francisco Bay salt industry.

Figure A.C.11. Salt Production and Land Ownership Consolidation Process.

Figure A.C.12. Old Oliver Salt Plant, pre-1906.

site is now closed.

In their natural condition, baylands such as these usually included navigable waterways and other areas covered by bay waters at high tide. Lands of such character are usually subject to land title claims (in fee ownership or as a public trust easement) by the State of California through the State Lands Commission. The Baumberg Tract lands were recently the subject of litigation between the State and the Leslie Salt Company; partial settlement of the litigation was reached in 1984.

Salt Operations

As noted above, the early nineteenth century salt making companies were primarily small family enterprises, comprising as few as twenty acres and operated by one person (Ver Planck). Total production in the Mt. Eden area in 1868 was estimated to be about 17,000 tons from fifteen about ten or plants. By 1882 the estimate was 30,000 tons from 20 plants and by 1900 the estimate rose to 100,000 tons from 20 plants. By 1910 the tonnage was the same but the number of plants was reduced to ten. In 1926, the year the Leslie-California Salt Company was incorporated, 10 plants owned by seven companies had an output of a little more than 230,000 tons.

> When the Leslie Salt Company was incorporated two and 350,000 ton a year. The 1949 production 772,572 tons was produced by three companies, including the small independents, with five plants (Ver Planck, p. 114).

At peak production the Baumberg plant, Figure A.G.13, had a design capacity of 180,000 tons per year. Today the average production is about 1,000,000 tons of salt from the single Leslie plant at Newark (Demoro, 1983).

The largest of the nineteenth century plants was the Union Pacific Salt Company which was in operation from 1872 to 1927. An illustration of the plant at the mouth of Eden Creek was produced in the Thompson and West Historical Atlas of Alameda page 147 (See Figure A.G.14). The 1883 U.S. Geological Survey Report Mineral Resources of the United States describes operations at the Union Pacific plant as representative of the industry.

> The largest of these companies, the Union Pacific, owns over 1200 acres of salt marsh land, the most of it consisting of a flat low-lying island, traversed by sloughs, and indented by lagoons which at ebb tide contain little or no water. On the adjacent shore of the bay are immense tracts of similar lands on which the works of other companies are situated. This

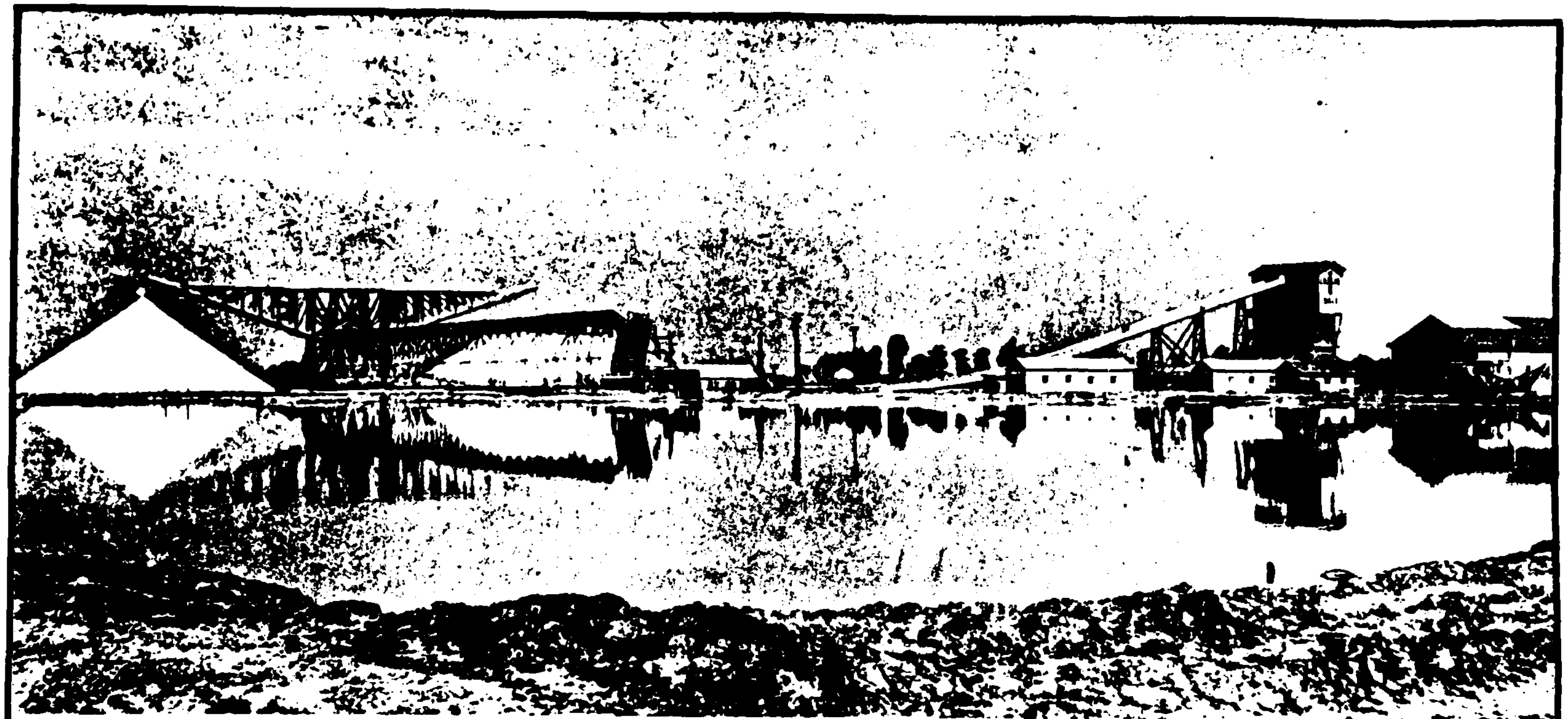


FIGURE 6. **Baumberg crude salt plant, Leslie Salt Co., south of Mount Eden. The pond area of the Baumberg plant, which includes most of the important 19th-century salt works, is 4,630 acres. The washer (center) has a design capacity of 180,000 tons a year. Bulk shipments only are made from the bunker (right).** ***Photo by Elmer Moss, courtesy Leslie Salt Co.***

Figure A.C.13. Baumberg Plant, Leslie Salt Company, from "Salt in California".

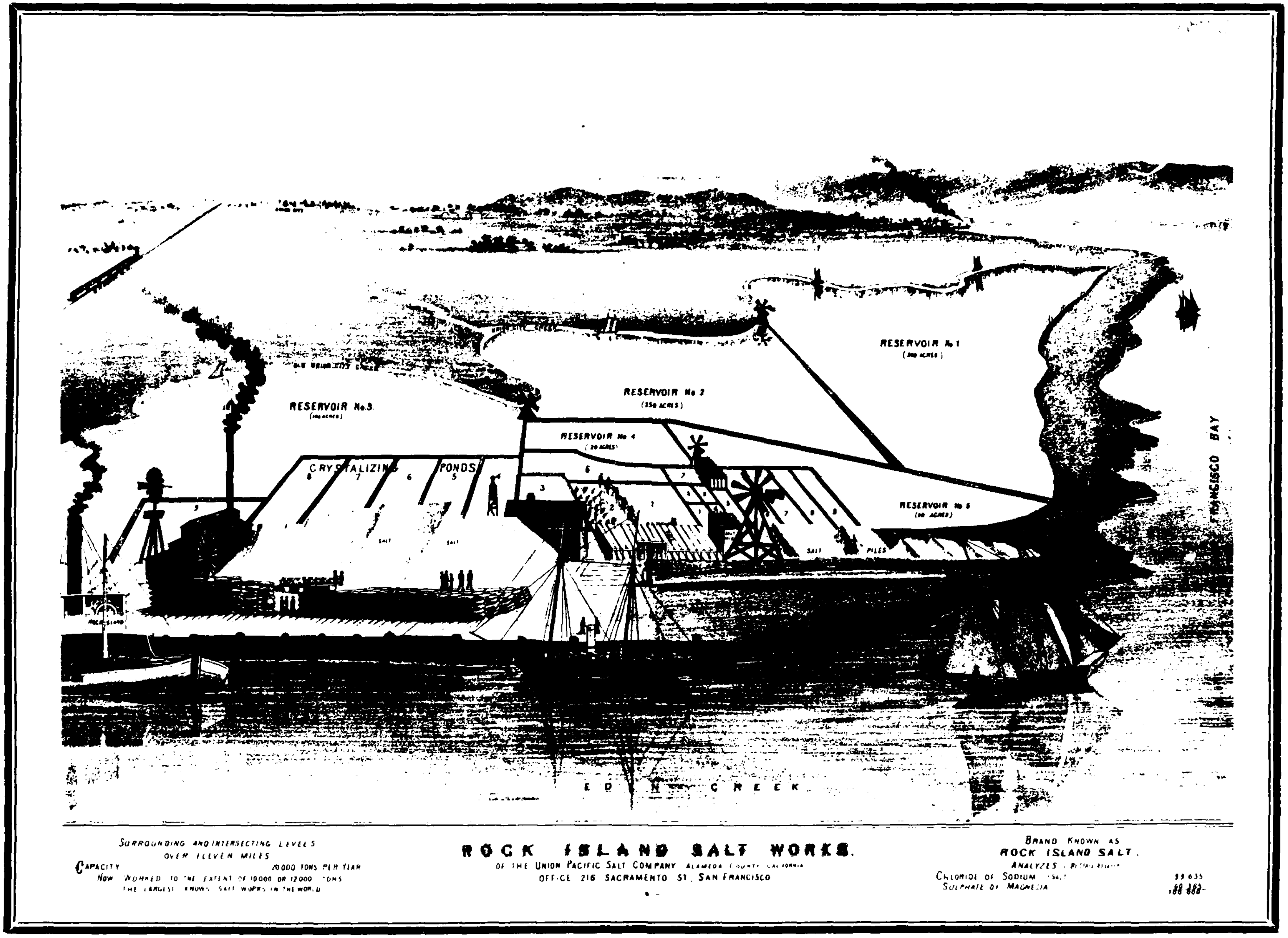


Figure A.C.14. Union Pacific Salt Company Rock Island Salt Works, Thompson & West, 1878.

island has been divided by dikes into numerous reservoirs, the larger containing from 100 to 300 acres each. Into the largest of these sea water is let through many small gates, and is left there for three or four weeks, when it is discharged into the next, whence, after remaining for the same length of time, it is passed on to a third, and finally to a fourth and a fifth reservoir, the lime and the magnesia being precipitated in these last two, and left on the bottom. After this the brine is drawn off into smaller ponds where further evaporation takes place and the salt crystallizes. When a finer grade of salt is to be produced, these ponds are provided with wooden floors, a few being also wholly inclosed with boards. When the deposit is completed the salt is raked into heaps, then shoveled into baskets and run out on cars to the edge of the yard, where it is piled in heaps which are left to weather through at least one rainy season, whereby the crystals are whitened, purified, and rendered fit for market of grinding.

> The other companies operating in this locality proceed on much the same plan as the Union Pacific, all the salt made here, being produced by solar evaporation (USGS 1883).

All shipments from the Union Pacific plant and from most of the others were by water. Pumping was by windmill until the 1920's. Early windmills drove paddle wheels running in an inclined wooden trough to raise brine from one pond to another. Others employed pistons driven through a crank and gear system. The most familiar was the Archimedes screw type which was used in the early years of this century before replacement by electric pumps (Ver Planck, p.113). The salt was hand shoveled before World War I. Thereafter various forms of machinery were used to harvest it. Wheelbarrows were used for transporting the salt from the ponds until the 1920's when they were replaced by small locomotives on movable rails.

Agriculture

Most of the East Bay shoreline, including the Hayward shoreline, was settled in the 1850s and 1860's by families who took up farming and salt production in the marshlands. From the 1860 U.S. Census of Agriculture several residents of the Mt. Eden area listed their occupations as farmers (Census of Agriculture 1860). John Johnson, the first recorded settler in the area, listed 108 improved acres,3 horses, 1 milk cow, 1 other cow, 5 swine, 1200 bu wheat, 3200 bu barley, and 4 tons of hay. His property was first surveyed in 1859 (Stratton, 1859). He was also the first known commercial salt maker in the area, having sold his first crop in 1854 (Parker, 1897). John Bothson listed 160 acres of improved land, 4 horses, 2 mules, 2 milk cows, 5 other cattle, 25 swine, 2800 bu wheat, 600 bu oats, 3600 bu barley and 20 tons of hay. William Michelson, another successful salt maker, listed 80 acres of improved land, 4 horses, 1 milk cow, 1 other cow, 8 swine, 2800 bu barley and 10 tons of hay. Fred K.D. Arff listed 400 improved acres, 3 horses, 2 mules, 2 milk cows, 1 other cow, 15 swine, 2400 bu wheat, 400 bu oats, 50 bu potatoes, 3200 bu barley and 10 tons of hay. His land was surveyed in 1858-59 (Stratton, 1858-1859).

The Census of Agriculture listed the following residents of the Baumberg area who declared themselves farmers: F. Arff, C. Bothson and H. Nielson (Census of Population 1870). The Census of Population also listed J. Johnson, C. Bothson, F. Arff, and H. Nielson as farmers. In 1880 residents of the area who declared themselves as farmers in the Census of Population were: R. Barron, J. Johnson, F. Arff, and F. Lund (Census of Population, 1880).

One of the largest land holdings in the study area was first settled by Andrew Oliver in 1871 (Guinn, 1904). On the 1000 acres of reclaimed marshlands the Oliver family carried on dairying, poultry raising, and stock raising as well as salt making (Sandoval, 1964). Mr. Alden Oliver, the grandson of Andrew, testified in deposition that his family had an agricultural operation near the present area of Eden Landing. Here they raised hogs, milk cows, and tended a vegetable garden. He stated that almost all of the easterly portion of his land was farmed until 1927, consisting mostly of cattle grazing, hay production, sugar beets and potato culture (Oliver, 1977).

In 1983 this researcher and project archaeologist, Benjamin Ananian, conducted a physical reconnaissance of the study area to determine if any physical evidence of agriculture remained. A wooden livestock corral was located at North Creek where it formerly met Mt. Eden Slough. The structure appeared to be at least fifty years old and was used to load and unload livestock to and from barges on the creek.

AFTER 1931

After consolidation of salt making operations by the Leslie Salt Company in the early 1930's the project area was the focus of salt making operations at the Baumberg plant which had been constructed in 1927. Throughout most of the 1930's the locations of marshes, salt works and other land uses were as shown on the 1931 Topographic Survey maps (USCGS T-4604, 1931, and T-4649, 1931, see Figure A.G.15. Between approximately 1939 and 1945 the Leslie Salt Company or their predecessors had stripped, leveled and reconfigured the Baumberg Tract to harvest salt from about 4600 acres of surrounding concentration ponds

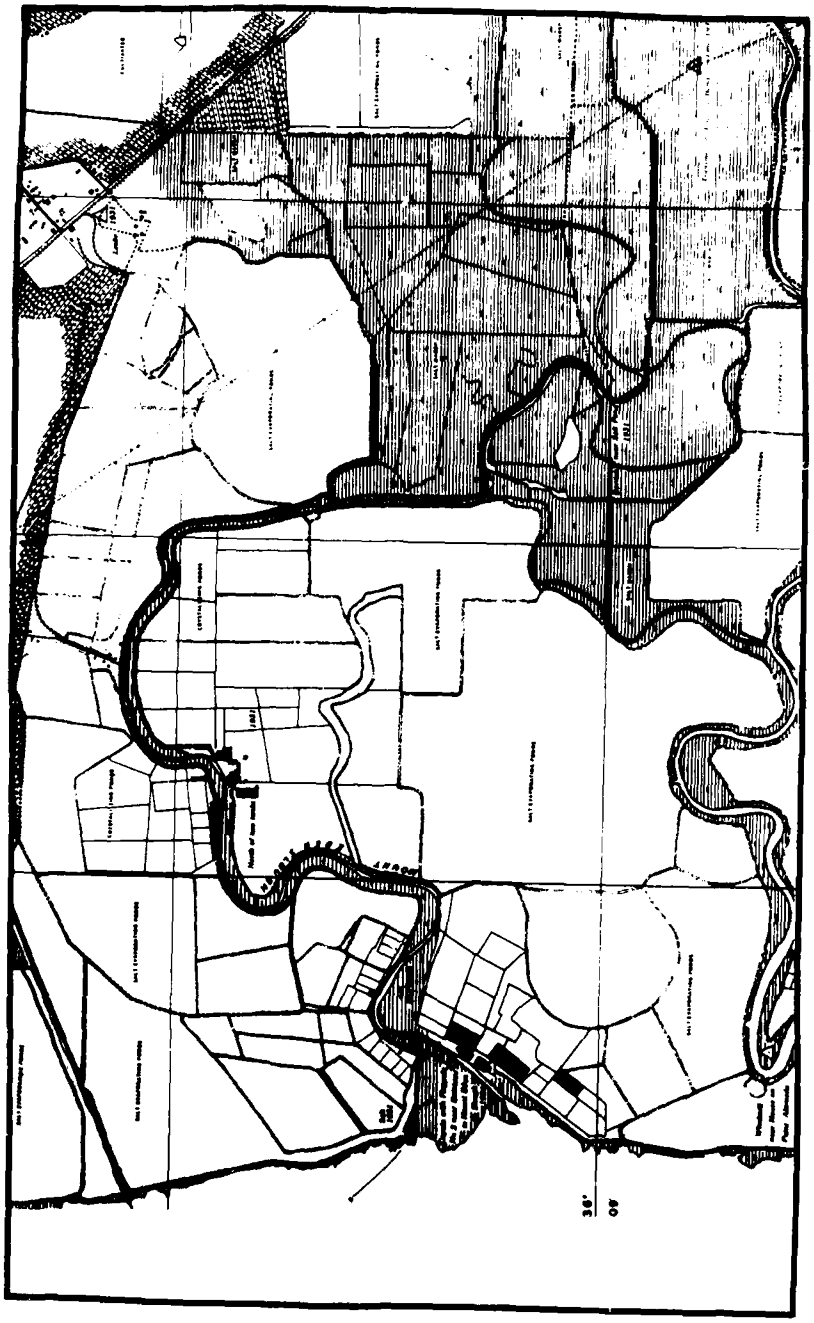


Figure A.C.15. Topographic Survey, 1931.

(Creegan & D'Angelo, 1983). Figure A.G.16 shows the schematic plan of the facilities at Baumberg as prepared by the Engineering firm of Creegan & D'Angelo in 1983. Their report describes the site as follows:

> The plant site included a pickle pond, crystallizing ponds, wash ponds, harvesting equipment and washer with a design capacity of 180,000 tons per year. Roads, retaining walls, ramps, and related structures were constructed and used until 1972 to harvest salt. Some of these improvements are still in place. The washer was dismantled and removed from the site. Since 1972, the property has been unused and generally has been in a dry condition with the exception of ponding water from winter rains. Recently, the tract was flooded to control dust in answer to complaints from the industrial community to the north and east (Creegan D'Angelo, 1983 n.p.)

Present Status

As described in other sections of the project Draft EIR/EIS, the subject property is not now used for any economic or commercial purposes. Adjacent properties to the south are used by the Leslie Salt Company for salt production. Historically related structures and artifacts that remain on the site are discussed in the Ananian archaeological report (Ananian, 1985).

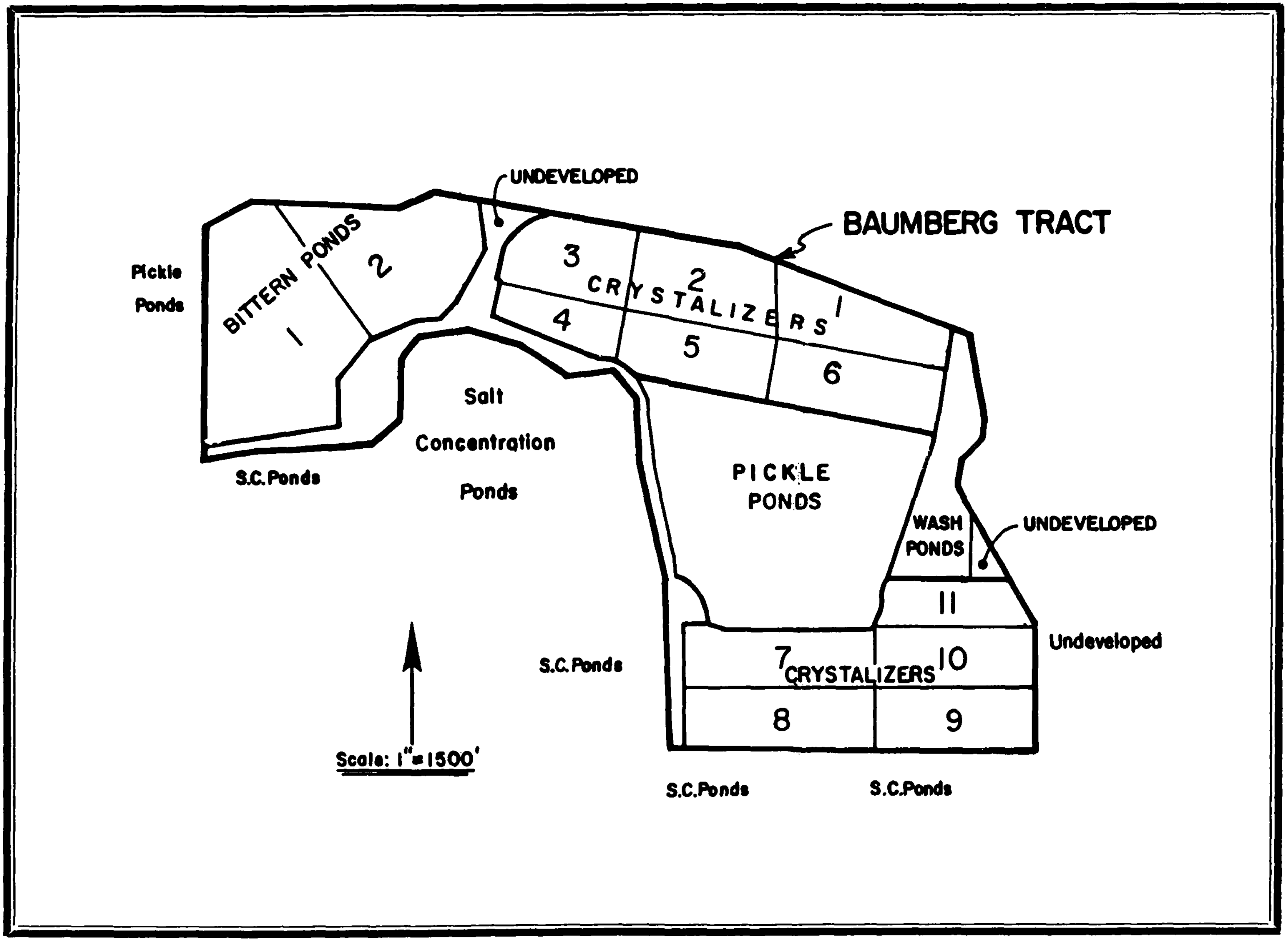


Figure A.C.16. Leslie Salt Company Salt Pond Numbering System.

final use for salt production rather than for agriculture the

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APPENDIX D

CULTURAL OVERVIEW

Appendix D. Cultural Overview

Costanoan, a member of the Penutian linguistic stock, was spoken by people who entered the Bay Area from the Delta about 1500 years ago displacing the earlier Hokan speakers living here (Beeler 1961). The migration also coincides with the appearance in the Bay Area of the archaeological artifact complex known as the Late Horizon or Lower Emergent period. Prior to 1500 years ago, the economy was focused on local exploitation of the environment with a heavy emphasis on shellfish, deer and acorn. Some trade existed but the early people were not dependent upon it, and social status was relatively egalitarian.

After 500 A.D. evidence of a complex trade network began to appear along with increasingly differentiated burials. The introduction of the bow, the increase in trade, and the more intensive exploitation of the environment increased both the wealth and quality of life of the people.

Bay Basin archaeology has been focused on the shoreline. This has distorted our knowledge of the area and has limited our temporal depth to between 4-5,000 years. However it appears that throughout this period the bulk of the population lived in semi-permanent village sites near the salt marsh. Seasonally these villages would become almost depopulated, retaining only the very old and very young, as parties of various types would leave for the exploration of temporarily abundant resources in other locations around the bay.

Except for the sweat houses which were timbered and semi-subterranean, Costanoan houses were insubstantial structures made of poles covered with brush or tule matting with a fireplace in the center. Whenever the matting became too infested with fleas they were burned and new dwellings would be built in a matter of hours.

Costanoan society was organized around patrilineal chiefs who served as leaders of a council of advisors and were responsible for directing economic activities, warfare and the distribution of food from the community food store.

Sonoral polygamous marriages were common, with women being bought with shell money. Divorce was easy. Living arrangements were generally patrilineal extended families.

Costanoan spiritual and physicial health was the providence of several classes of shamen who would intercede on one's behalf with the spirits for favors or the treatment of illness. They were generally held in high esteem and often feared.

Seven missions were established between 1770 and 1797 in Costanoan territory. The Spanish had a policy of aggressive missionization which included sending members from the same tribelet to different missions so that each mission would have a mixed Indian population.

As a result of missionization, a declining birth rate, and the ravages of introduced diseases, the last Costanoan tribelet ceased to exist as a viable entity by 1810 (Cook 1943).

The Mexican period lasted from 1824 to 1848 and was marked by the issuance of land grants and the secularization of the missions. After secularization, the detribalized and Christianized Indians were unable to reconstitute previous tribal life styles and either became submerged in Mexican culture or formed mixed bands settling in the backwaters of the state. By 1969 Galvan states that only 130 persons remained with some Costanoan blood in them.

Appendix C provides an expanded history of the salt industry and of the project area as a whole.

APPENDIX E

APPLICANT'S DETAIL OF PROJECT DESCRIPTION

APPENDIX E

APPLICANT'S DETAILED PROJECT DESCRIPTION

The following is the detailed project description prepared by the Applicant, as amended to insure consistency with the EIR/EIS text.

Alternative A: THE PROPOSED PROJECT WITH OFF-SITE MITIGATIONS

The proposed project is to develop 687 acres of the 736 acre site, and to offer 500 acres as wildlife habitat mitigation land (see Figures II.C.1, Development Plan, II.C.1a, Cross Sections of Proposed Fill and II.C.2, Land Use). The developed areas would include 300 acres containing a racetrack and ancillary facilities, 203 acres containing an industrial research and development complex, 18 acres for a hotel and visitor commercial land uses, 22.5 acres of commercial uses, including restaurants, a bank, and other related uses, 39 acres for an office park, and 20 acres for a recreation vehicle park, 10 acres of which may be converted to industrial R&D uses after the first 10 years of operation. An entertainment park is proposed for 23 acres. It is proposed as a family-oriented recreational park to provide rides, waterways, shows, and picnic areas, as well as an educational and historical component. The racetrack and entertainment park are proposed to share parking facilities.

Within the 736 acre project site the Applicant is proposing 23 acres of retention ponds distributed throughout the site; 21.2 acres of ball fields; 31.6 acres of landscaped main track infield; 8.3 acres of landscaped training track infield; and 45.1 acres of new marshland environment (includes 15 acres of public access trails and landscaping).

Project phasing is shown in Figure II.C.3. Phase I is divided into two phases. Phase IA involves construction of Baumberg Avenue and part of Shorelands Boulevard, allowing construction of 17.8 acres of Industrial R&D north of Shorelands Boulevard and 9.9 acres of Industrial R&D and 20 acres of recreational vehicle park as well as the 21.2 acre recreational field south of Shorelands Boulevard. Phase IB involves construction of the 300 acre racetrack complex, 4 acres of visitor commercial and the 23-acre entertainment park, as well as the Mt. Eden Creek marshland park and site runoff drainageway. Phase IB involves construction of the Highway 92 eastbound off ramp, Highway 92 eastbound on ramp, the Shorelands Boulevard SPRR overcrossing, and Shorelands Boulevard from the Highway 92 to the Phase IA section of Shorelands Boulevard. Phase II is construction of 34 acres of Industrial R&D.

Phase III involves construction of the Highway 880 southbound on ramp at Industrial Boulevard and restriping Industrial Boulevard to three lanes in each direction between Hesperian Boulevard and Highway 880. This will allow construction of an additional 47.4 acres of Industrial R&D land uses, the 3.9 acre, 3.4 acre, the two 2-acre and the 11.2 acre areas of commercial land use, as well as the 14 acre visitor commercial (hotel) area and the

28.1 acre and 11.6 acre business park in the western portion of the project site. Phase IV involves construction of the northbound off-ramp and southbound on-ramp at Highway 880 and Industrial Boulevard, addition of a fourth lane to Industrial Boulevard in each direction between Hesperian Boulevard and Highway 880, and construction of the westbound off and on ramps at Highway 92 and Shorelands Boulevard. Phase IV land uses would include development of the 94.2 acres.

LANDS PROPOSED FOR PUBLIC DEDICATION (The Applicant's "Mitigation" Lands)

The Applicant has proposed a mitigation plan that includes acquisition of approximately 500 acres of existing wetlands consisting of salt water marsh, levees, and salt ponds (see Figures II.C.4). This land would be used for wildlife habitat enhancement, marsh restoration, and public access to Bay-related areas. The Applicant has stated the intent to provide "an overall regional environment which will provide an expanded ability to support wildlife".

The mitigations proposed by the Applicant are considered by the Applicant as options to be incorporated into a final mitigation plan as agreements are reached as to the best, most meaningful approach to biological enhancement of the study area.

Key to this mitigation plan is an 80-acre brine shrimp feeding pond which would continue in Leslie Salt Company's salt production process. (See Figure II.C.5). An additional 17.2 acres would be created for plover nesting and feeding islands, and a total of 69.9 acres of salt water marsh creation and enhancement areas would be provided for the encouragement of salt water harvest mouse habitat. The applicant's concept of a cross section of a post-project Mt. Eden Creek is shown in Figure II.C.6. This illustrates the proposed marshland restoration and public access areas. The need to restrict cat and rat predators from offsite wildlife areas gave rise to design of an "anti-varmint encroachment device" to be placed on the project site side of all water channels. This is shown in Figure II.C.7.

Figure II.C.8 provides a key to photographs. Figures II.C.9, III.C.10 and II.C.11 show views of the project site. Figures II.C.12 and III.C.13 show the marshland adjacent to the site viewing southeast. Figures III.C.14-16 show marshland plants growing on the "Mitigation Land" south of the project site.

APPENDIX E

APPLICANT'S DETAILED PROJECT DESCRIPTION

Project Concept: Visual Appearance and Design

In the Shorelands project great care will be taken with regard to visual appearance - both as seen from the adjacent community and within the project itself.

1. Views and Vistas

The western gateway to the City of Hayward is the landfall approach from the San Mateo Bridge. From this point the Shorelands project will be visible looking across the Bay and the salt ponds. Visual features from that distance will be the seven-story hotel and the grandstand structure of the racetrack. Both will be attractively designed landmarks as seen from the Bay by day, and can be profile-lighted by night as a landmark and reminder that one is entering Hayward. Secondary gateways would be those to the Shorelands project itself. The major such gateway would be the new interchange at Highways 92 and 61 (Shoreline Expressway) where an access gateway will be established through the special landscaping and urban design features of the buildings. The access gateway to the project from the east will be the overpass over the Southern Pacific railroad tracks. This entry feature will be landscaped with heavily-planted embankments of the railroad overpass, from which high point the project can be seen before entering the actual project itself.

Within the project itself, Shorelands Parkway, the main boulevard throughout the length of the project, will be a major urban design feature. It will be a limited access boulevard with landscaped medians and rights-of-way on either side. Related design features include "windows" where vehicular or pedestrian travelers along Shorelands Boulevard can look across landscaped space onto the open space of the salt ponds or park areas. Other features are open spaces on both sides of the boulevard where the landscaped rights-of-way visually expand to include parks and playing fields.

Architectural quality, as well as landscape design, is of prime importance to the Shorelands project. It is anticipated that an architectural design competition will be held to select the architect for the racetrack facility, the most prominent structure within the project. The overall architectural concept for the entire project will include the use of unified color schemes, natural materials where feasible, and an architectural design control system to ensure architectural quality of any project which may be sold to other developers.

Shorelands Racing Park

Basic Concept - Shoreland Racing Park

The basic concept of the Shorelands Racing Park is the creation of a "world-class" thoroughbred racing facility which will improve the conditions of horse racing in Northern California and create a positive environment for the remainder of the Shorelands project. Figures II.C.17, II.C.18 and II.C.19 provide an artist's concept of the proposed grandstand.

The recreation and entertainment character of the racing facility is further emphasized by the proposed trails and public open space lands, the agricultural "theme" park, and the public softball and soccer fields. Also central to the concept are the creation of other public benefits for the larger community (such as agricultural and historical displays) and the significant contribution to the positive public image being developed for the City of Hayward, which would result from such a landscaped entrance to the City.

In addition to the more general goal of providing new thoroughbred racing facilities employing state-of-the-art techniques in their design and management, the developer's more specific goals include the following:

1. Building the finest horse racing facility in the country, with turf and all-weather tracks;

2. Providing a well-designed, built, and managed racing facility which will be suited to the safety, convenience and enjoyment of the race attendees. It will be a friendly facility with the primary goal of proper treatment of the patrons by well-trained, courteous track employees;

3. Building and operating a first-class backstretch facility which will provide safe and secure working conditions as well as protect the health and safety of all employees and horses. Owners/trainers will not have to worry about the fire safety and health aspects of where their animals are being kept, and where the employees live, nor be faced with the inconvenience of having to trailer their horses in for races due to inadequate barn and "backstretch" facilities at the track.

Description of Proposed Racing Facilities

1. Expected attendance: Analysis of the potential for attendance at the Shorelands racing park shows that the first year average daily attendance can be expected to be 10,430, increasing to 12,350 by the tenth year. While this report was in process, in 1985, inter-track closed-circuit television broadcasting of live racing programs was legislated for Northern California. Many patrons now "attend" the races at a "guest" track, such as the County Fairgrounds in Stockton, Fresno, etc.; while the live "host" track shares in these revenues. The above attendance figures are based on population trends and current "live" attendance of approximately 8,000 at Bay Meadows; it is assumed that will close and that most of the 2,600 people who attend that facility as "guests" will come to The Shorelands Racing Park.

These are base line attendance projections and do not reflect the probable attendance levels which may result from the combination of a) a new and attractive "world-class" facility; b) responsive management; and c) effective and aggressive public relations programs designed to attract new market support for racing in the San Francisco Bay Area.

A feasibility report prepared by Harrison Price Company estimates possible peak attendance of 23,000 to start and 27,000 in the tenth operating year. Such peak attendance may occur one or two weekend dates per year. These further correspond to the seating requirements set forth below.

2. The Grandstand

a) Seating

Permanent grandstand seating:

Grandstand	280 seats per module
Extended grandstand	98 seats per module
Clubhouse	240 seats per module
Suites	50 seats per module
Total permanent seating	668
Design modules (12)	8,016 total seats

Other seating:

Clubhouse and other restaurants	1,400 seats
Temporary seating in concourse and apron area	3,000 seats
Simulcast theater area	500 seats
Total other	4,900 seats
Grand Total Seating Capacity	12,916 seats

Infield and Apron Capacity

Apron standing room	25,000 people
Infield seating and standing room	4,000 people
Total track capacity	41,916 people

(Source: Dimitri Demopulos, Century AE, Architects/Engineers)

b) Food and Beverage Facilities

The general admission area will include a cafeteria, for sit-down meals, and various fast food and beverage dispensing areas. In addition to these, there will be several bars.

The clubhouse dining area, which would include the turf club as well as fast food and beverage dispensing areas, would also have several bars and lounges. On this level will be the principal "meeting room" for the facility, which could serve as a conference center or meeting hall when the racing area is not in use. In addition to the club area, 60 "sky boxes" (if included in the final plan) will have catering service available to them.

c) Betting Booths

Betting booths will be provided in the general admission section, in the concourse area, and in the clubhouse. In addition to these main booths, auxiliary booths will be provided in the horsemen's hall (cafeteria), turf club, lounges, sky boxes, and the infield.

d) Sky Boxes

Sixty private boxes may be built at the upper level, each with 20-foot viewing frontage. These may be sold to patrons who can watch the races while they eat catered meals. The number of such boxes to be built is a function of marketability, since no comparable Bay Area experience exists, no basis for an actual "count" is empirically known.

e) Officials' Area (above roof)

Various official functions pertaining to the conduct of the races will be held in the officials' area. The officials area includes offices for stewards and timers, a press box, a photo finish facility, and space for miscellaneous television and camera equipment.

f) Handicapper's Museum (concourse level - or possibly a separate building in the infield)

The handicapper's museum will include an exhibition hall for museum exhibits, an auditorium/lecture hall, and a small service and support area for the exhibits.

g) General Management - Support

Operational offices will be provided for the operating company headquarters. In addition, there will be offices for three racing associations, a space for pari-mutuel machines and offices, a television production studio, grandstand offices for the California Horse Racing Board (CHRB), admissions and security offices, and a first aid/medical center.

h) Television Facilities

A complete television production studio will be included in the main grandstand structure. A large format, closed-circuit television screen will be provided in the infield, at several appropriate spots throughout the grandstand structure, and in the turf club.

i) Security and Fire Systems

The Shorelands racing park will maintain and operate sufficient private security to handle on-site parking, traffic control, enclosure security, and other security matters not requiring a sworn police officer. This private security will be provided by a staff of private security personnel employed directly by Shorelands. Additional racing-related security is provided by the Thoroughbred Racing Protective Bureau, under the purview of the California Horse Racing Board. A full time fire officer will also be available during the racing season who will act as a liaison between facility maintenance and operations and the fire department. Offices will be provided in the grandstand structure and backstretch area for the security staff and the fire officer.

j) First Aid Station

In addition to ambulance service for the backstretch area and for the grandstand, there will be a permanent medical facility, either within the grandstand, or in a nearby building ("Doc-in-a-Box"). When the track is operating, either for training or racing, a nurse is on duty. During racing events, in addition to the nurse, a physician will also be on duty.

3. The Racetracks

The planned facility will include three concentric racetracks (Figure II.C.20). The inner track will be a turf track, one mile in length and 90 feet wide at all points. The middle track will be a one and one-eighth mile, wet weather "sand" track, 90 feet wide at all points. The outer track will be the main "loam" track, one and one-quarter miles long and 90 feet wide, designed for dry weather. All tracks will have banking on the turns, in conformity with the latest design by track experts. The outer track will have two chutes to permit various combinations of distances from one-quarter mile to three miles. The chute designs allow for maximum flexibility of racing operations, and races of varying lengths, in order to maximize racing diversity and entertainment value.

The racetracks will be provided with non-glare lighting for night operations.

4. The Infield Area

The infield area will be connected to the apron, in front of the grandstand structure, through a tunnel under the three racetracks. The tunnel will be eight feet in height and 40 feet wide, with recessed lighting for safety. This permits public and maintenance access to the infield without crossing the racing surfaces.

Totalizator boards and video display boards will be installed in the infield for visibility from the grandstands. Several infield locations will be pre-wired to allow for temporary installation of betting booths established in modules and movable to the infield sites as needed. The infield will also have concession stands to provide for patrons' needs, and picnic areas where families and groups will be encouraged to participate. Restroom facilities will be provided in several different locations in the infield. This infield configuration will permit events other than horse racing to be operated when the facility would otherwise be unused.

5. Paddock/Jockey Area

The paddock and jockey areas are to be placed in front of the grandstand. The jockey area, within the grandstand, will provide access to both the paddock and winner's circle. In the jockey area are located the silks storage, locker rooms, showers, physical training facilities, a small lunch room, and rest area.

The saddling paddock will include 20 saddling stalls, a parade ring (70 feet in diameter), a weighing stand, the paddock office, and the officials' area.

6. The Backstretch Area

The backstretch area will consist of barns for participating horses, a Clocker's stand, a "village" for centering the everyday life of the various horsemen and employees concerned with backstretch activities, shops, an administration building for officials, cafeteria, fire station, security offices, equine veterinary clinic and therapeutic swimming pool. There will also be a five-eighths mile training track within the "enclosure" (that portion of the backstretch wherein one must be licensed by the CHRB to enter). A trailer and employee parking area will also be provided in the backstretch.

a) Barns

Barns will include clean, well-designed horse stalls 12 feet by 12 feet. Ceiling heights will assure a minimum in the stalls and breezeways of 16 feet. Good ventilation will be provided, as well as layout configurations designed to facilitate everyday chores in caring for the animals. Every barn will include washing spaces, tack rooms, hay and grain storage, and manure disposal facilities. The barns will be sprinkler-protected. Living quarters will be sprinkler-protected and separated from the stable areas with fireproof materials. A total of 2,500 stalls are expected to be installed (1,500 constructed in the first phase).

b) Veterinary Clinic

A first class equine veterinary clinic will be provided in the backstretch. The facility will include surgery, x-ray, recovery, diagnostic, therapy, and related areas. The clinic will be under the direction of a group of veterinarians. The main clinic building, 5,000 square feet, will include surgery, x-ray, recovery, offices, etc. An area for hydrotherapy and swimming pool is also provided in the backstretch.

c) The Village Activity Buildings

The Administration building, cafeteria/lounge/recreation buildings, and merchants buildings, such as tack shops and silks manufacturers, are provided. The Administration building includes offices for the Racing Secretary, Horse Identifiers, Paymaster of

Purses, Security and Stables management, and offices required by the California Horse Racing Board, Thoroughbred Racing Protective Bureau, and the Horsemen's Benevolent and Protective Association.

d) The Training Track

The training track will be five-eighths of a mile in circumference, a standard oval with "gentle" turns (i.e., shorter stretches with more distance on turns, to decrease chances of injury or accident).

Training track width will be 60 feet, and banking on turns will approximate a four-foot maximum height at the center of the turns.

Entertainment Park

Entertainment Park Concept

The other major public recreation component of the proposed Shorelands development will be the Shorelands entertainment park. This park will include a wide variety of activities for people of all ages, including a farmers market, a specialty commercial area, an antique carnival, a super playground, a picnic area, an agricultural display area, and beer and wine gardens (Figures II.C.21 and II.C.22).

Although the entertainment park will be a destination facility in its own right, it will also be related to the racetrack. The audience at a Bay Area racetrack today is predominantly over the age of 50. Among other aims, the Shorelands entertainment park is designed to furnish a "baby sitter" for adults who want to visit the racetrack, and to encourage more young adults to participate in the combined recreation and entertainment. The entertainment park and the racetrack could each interrelate to the other with an overlap in patronage resulting to each.

Description of Facilities

The entertainment park facility is planned to have six or more separate types or clusters of activity. Starting with the entry area (a turn-of-the-century farmers market), all activity centers will be linked along the central "Main Street" area to the agricultural exhibits at the opposite end. Patrons will walk along pedestrian-scale "Main Street" walkways to the other activity centers, including an antique carnival, a super playground, a picnic area, beer and wine gardens, and an agricultural display area. Each activity cluster is described in more detail below.

Areas of Park

1. Park Entry and Specialty Retail

At the park entry will be located a farmers market with fixed displays by farm product vendors, as well as a possible second level office area. Also in the entry cluster will be an international deli with an outdoor cafe, and a French bakery, also with an outdoor cafe. A possible dinner theater, and specialty retail outlets such as "Banana Republic," "Sharper Image," a gourmet shop, a "Cocolat"-type chocolate factory, computer recipe shop, artisans, a vaudeville saloon, a beer hall and beer garden would be located in the "Main Street" area.

This last area would include a lost-and-found station, a nurse's office, guest relations office, a baby-sitting station and sleep area, stroller and wheelchair rentals, a games area, food service, and fantasy theater - all oriented toward young children.

Close by would be specialty outlets such as exotic sporting goods, other artisans (such as glass blowers), coffee shops, art galleries, camera and film shop, and other outlets, e.g., artisan-made jewelry. A transportation center (old auto/ truck/wagon museum), an interactive theater, and a restoration display area would also be nearby.

2. The Antique Carnival

The antique carnival, a turn-of-the-century-carnival, will include such old-time carnival features as an antique carousel, a maze, shooting gallery, antique bumper cars, old-fashioned fun hous`, ring toss, darts and balloons, face painting, palmists, hammer and bell ring, and other traditional carnival games.

3. The Super Playground

The super playground area will be a well equipped outdoor playground for children, including such features as padded roller barrels, mirror-maze crawl-through, climbing nets, jungle climb and vine swings, a lighthouse spiral slide, giant pillow slide, and ball-crawl feature.

4. Picnic Area

The picnic area will also be provided with convenient access from the playground. This area will have barbecue facilities, shade structures, picnic tables, horseshoe pits, small landscaped ponds and restroom facilities.

5. Winery Displays and Tasting Facilities

Individual winery display and tasting facilities will include three or four tasting retail sales rooms provided by individual wineries, surrounded by gardens and picnic areas.

6. Agricultural Display Area

The State of California Department of Fairs and Expositions has been contacted relative to its participation in, and support of, a State-Supported Agricultural Display Center. The agricultural display pavilions will be along one edge of the park area, and could include livestock displays, farm products, and up-to-date information on farm research activities. These are expected to be sponsored by the State, and/or various counties in California, and/or the agri-business community, and could tie in with racing activities at the track relating to county fair sponsorship.

7. Future Expansion

Area is included for future park construction, as it has been determined that constant change in amenities increases repeat attendance.

Recreation Vehicle Park Facilities

Well-landscaped facilities will be provided as part of the project for the parking and habitation of campers, small mobile homes, recreation vehicles, and similar mobile housing utilized by many horsemen in moving from one racing meet to another. Two national R.V. park operators have expressed strong interest in providing 20-25 acres of such use.

Visitor Commercial - i.e., Hotels

Two separate and distinct hotels are proposed: a 500-room (200-room first phase) commercial and business visitor facility near Highway 92 at the new interchange off-ramp; and a smaller, 75-room luxury suite hotel near the Racing Park. The first is to serve the business traveler, while the second is for the Racing Park visitor. The number of rooms at either location could increase or decrease, but the total of 575 rooms is anticipated not to vary significantly.

Corporate Business and Industrial Park

The project proposes a state-of-the-art Corporate Business Park, including "smart" buildings, microwave communications and computer facilities, teleconference facilities, and light manufacturing facilities.

The concept is to create a workplace adjacent to jogging trails, a fitness center, baseball and soccer fields.

Commercial Uses

Both the recreational facilities and the corporate business park will require certain high quality commercial uses. Restaurants are common to both, as is a medical facility (a "Doc-in-a-Box"). In addition, other commercial uses arising from the business park might include a janitorial supply house, a copy center, a secretarial service, an employment agency, barber and beauty shops, a family care or nursery school, a printing shop, professional offices, service stations, and florists.

Interim Uses

Due to the size of the parcel and the number of years it will take to develop all of it fully, some "short term" or interim uses may be included in the project. The originator and operator of the Alameda (Antique and Collectible) Penny Market proposes a weekend, 20-acre use in an appropriate area. This is a far different sort of operation than the countless Bay Area "flea markets." Stall holders are closely screened to assure that only high quality and reliable merchandise will be sold.

Transit and Traffic

In order to reduce traffic generated upon the public streets as a result of the project, the developer proposes to make arrangements with a Hayward bus-builder, Gillig Brothers, to produce, under license agreement with British Leland, a double-decker bus capable of carrying 70 passengers while using the parking space at a BART station of a single standard 35-passenger bus. The developer has suggested to the City's program planner that a bus terminal could be created on City-owned land adjacent to the South Hayward BART station. (In lieu of a terminal, additional curbside bus stops could be provided at the BART station.) Busses, could run down Tennyson Boulevard to Industrial Boulevard and thence to the Shorelands, without stopping en route. This shuttle would permit customers to ride BART from anywhere in the Bay Area, with an automatic transfer on the shuttle system to the racetrack facility. Ten percent of existing Bay Meadows attendees use public transit. The transit consultant to the developer believes that such an efficient shuttle system could well attract 20 percent of the patrons. Other transportation proposals by the developer include "loading" and "unloading" the racing facilities at non-peak hours, encouraging industrial users to stagger business hours, and organizing project-related car pools to minimize traffic loads at peak hours.

PROJECT IMPLEMENTATION PLAN

The Shorelands project is large, unusual and complex. These characteristics make the permitting and financing processes more complicated than is the case with most projects. Approval from permit granting agencies is a major determinant of project feasibility. A developer is unwilling to commit substantial resources to a project the viability of which hinges upon multiple regulatory approvals. Events necessary for project implementation fall loosely into regulatory, design, financial, and construction stages with the first three stages orchestrated so that their requirements are all satisfied before the construction phase can begin.

The regulatory stage is the one over which the developer has the least amount of control, so it is the regulatory stage around which the design, financial, and construction stages must be planned. Shorelands has developed an ordered sequence of steps for project implementation with the objective of completing the initial stages of regulatory approval without impeding the progress of the subsequent stages, or exposing the developer to unnecessary loss in the event of permit denial.

In this section the principal steps which the applicant will take to create a feasibly implementable project at Shorelands will be reviewed. In each case, the reason for the step and some of the important considerations which will be brought to bear on decisions at that point are reviewed. The purpose of the presentation is to demonstrate the interrelatedness of various actions which may otherwise seem disconnected (since the responsibility for the actions is divided among a number of agencies and the applicability of the actions may be to portions of the site or the project rather than its entirety) and to begin to offer the reader a clearer picture of how the Shorelands concept of a racing facility, theme park, public open space, and commercial industrial development would be brought about.

The order of some of the steps shown below is tentative. However, the overall ordering reflects the project concept and the intentions of regulatory and permitting agencies as far as they are known as of this writing.

1. Environmental Review

Review and City certification of this Environmental Impact Report/Statement (EIR/S) is seen as the initial step in moving toward implementation of the project. Certification of the EIR/S must precede further discretionary actions bv the City.

2. Amendment to the Hayward General Plan

New designations applicable to the Shorelands site would constitute a General Plan Amendment.

3. Applications for Fill Permits

The development of Shorelands must comply with a series of regulatory requirements applicable to bay front developments. Any project involving a bay front location is subject to review by a number of regulatory agencies, including the local jurisdiction, the San Francisco Bay Conservation and Development Commission (BCDC) and the U.S. Army Corps of Engineers (this is detailed in Sections I.D and E). Only upon the approval by the regulatory bodies would the project be allowed to reach construction. In order to bring the low lying Baumberg Tract up to the ground elevation required by Federal flood insurance program regulations, a considerable amount of imported fill must be placed upon the site. A portion of the site must be filled early on so that the soil engineers have adequate time to observe the settling characteristics of the imported fill. Before any filling may take place, however, a permit authorization must be sought. Shorelands submitted a separate fill permit to the City for Pond 14b, outside the jurisdiction of the Corps, and subject only to a City and BCDC permit. This first fill permit application is pending completion of the EIR/EIS.

The importance of obtaining the first fill permit is to allow the project planners to begin to test alternative fill plans in order to make a determination regarding the physical feasibility of the site plan. Subsequent experimental fills will be needed for other areas of the site for the same purpose.

4. Negotiation of Labor Contract for Construction

Shorelands' next step is to negotiate the construction labor contract, thereby establishing with greater certainty the actual cost of project development. Securing the labor contract for construction should precede the Shorelands' operation of any racing days at Bay Meadows which may be granted to it, in order to avoid the possibility that labor negotiations for racing/operating unions could interfere with Shorelands' construction union requirements. This step is concurrent with 5. below.

5. Obtain a License to Hold Racing Days

Racing organizations must apply to the California Horse Racing Board for authorization for racing days, which are limited in each geographic area of the state. Shorelands need not have a track to hold races; races may be held elsewhere, and Shorelands is working with Bay Meadows to use that track for racing days prior to track construction at the Shorelands.

In considering the licensing requirement, it is important to understand that the company which owns a race track is legally a separate entity from the organization which actually conducts horse racing meets. Shorelands had originally intended to be a track owner, but not a racing association. It would have leased the race track to other racing associations, but conducted no horse racing itself. This arrangement would have limited Shorelands' income from racing to that portion of the racing revenue designated as "track takeout". If the Shorelands Corporation both owns the track and operates the racing association, however, its income would be increased to include the racing association's share of total racing revenues.

By becoming a racing operator as well as a race track owner, then, Shorelands expects to assure more adequate income from racing to cover track development and financing costs. Should Shorelands obtain a license to conduct horse racing at Bay Meadows (or elsewhere) on an interim basis before the track in Hayward is built, revenue from that racing would be of considerable assistance in offsetting planning and initial implementation costs of the Hayward project.

If Shorelands does not receive a license to conduct horse racing, what would happen to the project? This question cannot be answered with certainty, but it should be noted that neither Leslie Salt (which is leasing the site to Shorelands under terms of a 10-year purchase option) nor the City of Hayward have indicated that a race track must be built if operating a track is economically impossible. Feasibility would be enhanced by Shorelands' obtaining racing days in advance of building its own track. Should that not happen, and should the project's final financial analysis reach a determination of infeasibility, then it is possible, but not probable, that the track component could be dropped.

It is also possible that the racetrack facility could be constructed in stages, including in the first phase of the present project only the stables and training track, which would be leased to the horse trainers who race at Bay Meadows and Golden Gate Fields. A grandstand and race track would then be built 3-5 years later as a latter phase of the project. A second possibility is to substitute some other kind of public-use-oriented facility (say an open space park, similar to the Lake Elizabeth public area in Fremont. However, a lake also would create expense without offsetting revenue).

6. Finalize Program for Financing Public Improvements

This step is concurrent with 5., above.

By the time this step is reached, a combination of activities made possible by the preceding steps will have enabled Shorelands to cost the proposed project in much greater detail. The fill experiments will have provided information needed to reach decisions on the final configuration of the site plan. Negotiation of a labor contract will permit a closer calculation of construction costs. Resolution of any uncertainty with regard to the feasibility of the track component will have determined with greater clarity - particularly as to phasing - how that portion of the project will take shape. Permit approvals, with specification of conditions of approval, will allow estimation of the cost of satisfying those conditions. Thus, the main cost parameters will be more accurately estimated at this point, and final estimates of public infrastructure scale, location and costs can be made.

8. Complete Analysis of Project Economics and Seek Outside Financing

At this point, the specifics of the project will be much more closely specified than they are at the present time: the cost of each component will be known, the availability of outside funding (via assessment districts, corporate sponsorships of theme park facilities, collaboration with other racing associations, or whatever other sources) will be substantially known, and a more final estimate of future project revenues can be developed. The purpose of the detailed financial analysis in this step is to provide background information for the development of a loan package that, under present plans, would be offered for sale through an investment banking firm. It is possible that some industrial portions of the site would not be held and developed by Shorelands, but might be spun off at this point for purchase and development by one or more independent development firms under agreement with Shorelands.

9. Finalize Bid Packages

At this point, the project would be put out for bids by architecture and engineering firms to prepare final plans.

10. Implement Needed Transportation Improvements/
Begin Construction, Phase I, Proposed Project

The completion of Shorelands, and other projects proposed for future development in Hayward, will require increases in the capacity of the existing transportation network. Among the specific improvements the project sponsor sees as taking place over the development term of this project, or soon thereafter, are the extension of SR 238 across the Hayward Hills, and the construction of a Shoreline Expressway between the San Mateo Bridge and San Leandro. The former project would generate a great deal of fill that could potentially be used in the latter project, or on the Shorelands site itself, to which it could be hauled along Industrial Boulevard. Federal designation and funding of either or both of these routes would be extremely helpful in assuring funding and hastening construction. Hayward area transportation improvements will be phased through time. First phase is probably SR 17 improvement, second phase is SR 238, third phase is Shoreline Drive improvement. Principal project requirements are an additional interchange on SR 92 and a grade separation over the Southern Pacific tracks to Industrial Boulevard.

AD-A180 378 THE SHORELANDS: GENERAL POLICIES PLAN AMENDMENT 83-23 ZONE CHANGE APPLICATION 83-24 VOLUME 2 APPENDICES(U) COLE/MILLS ASSOCIATES MARTINEZ CA MAR 87 3/3

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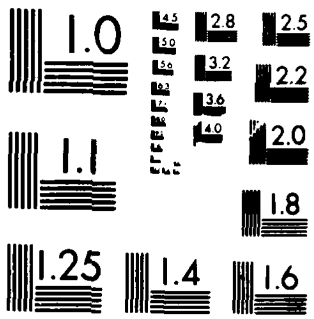

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

Infrastructure needs include fill, streets, sewers and water supply lines. Shorelands' present intention is to finance these improvements, to the greatest extent possible, through the formation of a public assessment district. [Editor's note: The City has not committed to formation of public assessment districts or to sale of municipal bonds. These financing mechanisms would depend entirely upon agreements that have not yet been initiated by the Applicant and are not at present a part of the City's long-range planning for this portion of the City.]

The rationale for this financing approach is the fact that the completed project will make a substantial contribution to the City's tax base, or equivalently, the City's debt carrying capacity generated by the project be used to help finance the public improvements.

Under a new assessment district, a portion of the property tax revenues generated by the Shorelands project would be appropriated for paying municipal bonds sold to finance the public infrastructure. The specific content of the infrastructure to be financed (which might include some site preparation costs, such as fill, and some actual facilities, such as parking lots, as well as the streets and subsurface improvements already mentioned) would be subject to agreement with the City of Hayward, which would form the assessment district(s) and arrange for the sale of the bonds.

This step must precede final project planning and financing. The project sponsor will need to know how much of the infrastructure will be financed through municipal bonds, before he can finally determine the amount of debt to be financed through private sources. Before approaching private investors, however, it is necessary to have a fully detailed project description; hence the next two steps.

7. Finalize Plans for a Public-Oriented Entertainment Park

One of the main features of Shorelands' Phase I development is a quasi-"theme" park: a family-oriented recreation center envisioned as operating in a complementary manner to the race track, and strengthening the appeal of the entire project as a recreational attraction.

One of the concepts of this component of the project is to involve corporate sponsors and/or outside lessees, thereby reducing the project sponsor's share of development costs. To market the theme park successfully to such outside parties, at this point a detailed plan for the park will be needed, in terms of content, design and operation. With this in hand, outside participants will be sought, and a final finance and management plan for the quasi-"theme" park will be developed.

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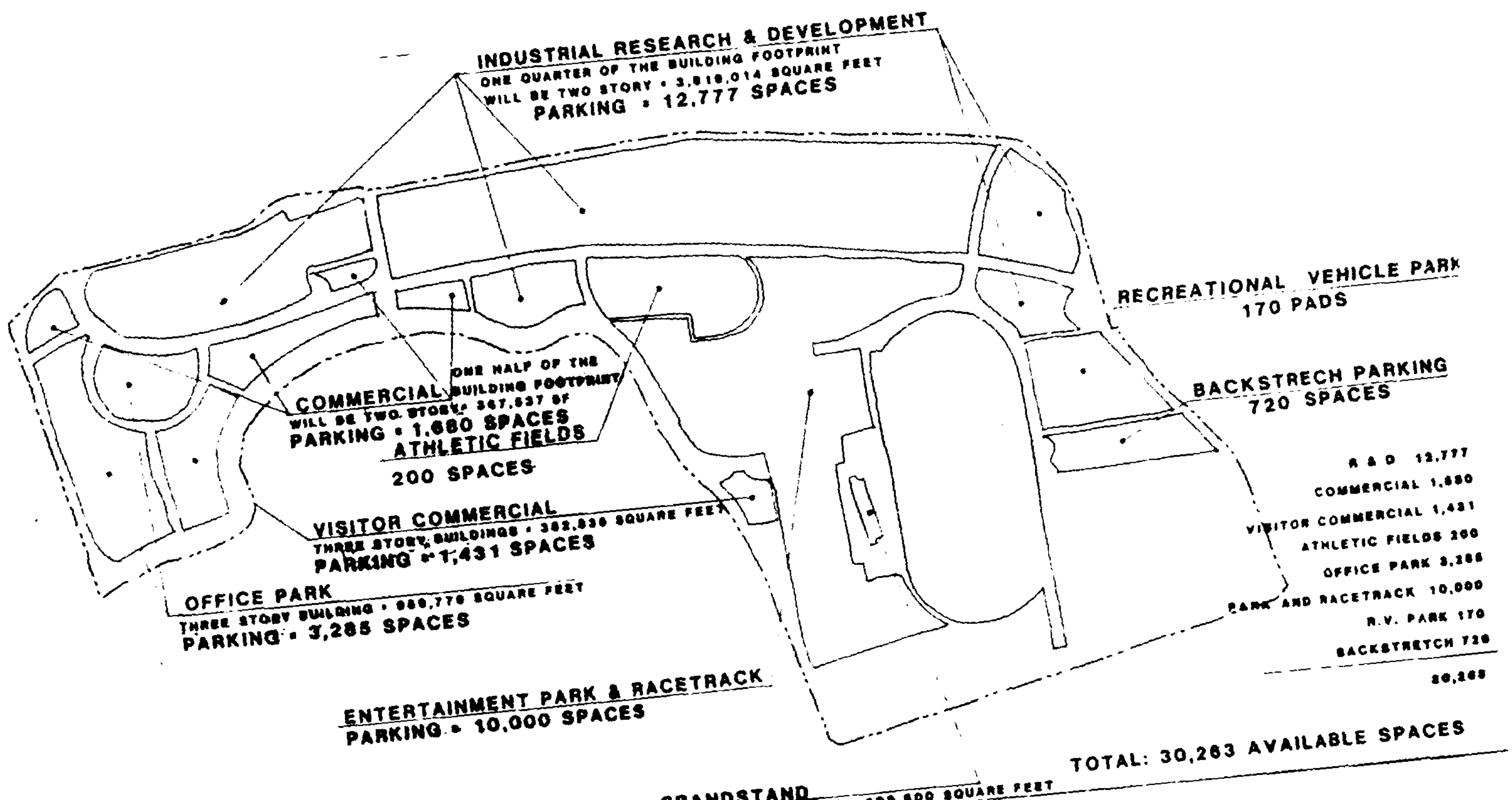
BUILDING COVERAGE, HEIGHT, SQUARE FOOTAGE
AND PARKING REQUIRESMENTS
FOR
SHORELANDS DEVELOPMENT
HAYWARD, CALIFORNIA

May this report clarify the manner by which Shorelands Corporation has determined the building footprint based on land use, parking ratio to floor area, and projected visitor and employee patrons. The basis for all land use calculations has been Zoning Ordinance No 209 C.S. and Parking Ordinance No. 77-016 C.S. for the City of Hayward.

Shorelands has used two-story structures for most of the industrial-research development and commercial properties. Three-story structures have been planned for the visitor-commercial and office buildings. One-story structures are used as models for some of the smaller commercial restaurant sites and recreational vehicle property. All of the parking is planned as surfact parking at this time. Parking structures will increase foot print yield and escalate construction costs. Parking structures should be considered on a case-by-case basis.

Our parking totals are all well below densities allowed in the City Ordinances and the beautification or landscaped areas exceed the City standards. Planning flexibility should be retained to allow the developer the freedom to create a truly unique community within the City of Hayward.

Pages 4 through 11 demonstrate the desity statistics. These statistics show building footprint, parking coverage and landscape coverage of the individual uses which may be developed on the various parcels of property. The footnote on page 12 list the primary sources for the information which has been accumulated to prepare this report.



LAND USE PARKING STUDY

VISITOR COMMERCIAL

(375 Room, 3 Story Hotel with Conference Center)

Coverage Percentages:

Building Footprint	15%
Parking Coverage	65%
Landscape Coverage	20%

Data:

Guestrooms		375 @ 468 S.F./room	=	175,500 S.F.
Ballroom		850 people	=	10,000 S.F.
Meeting Rooms:				
	#1	175 people[1]	=	2,000 S.F.
	#2	175 people[1]	=	2,000 S.F.
Conference Rooms:				
	A	30 people[1]	=	300 S.F.
	B	30 people[1]	=	300 S.F.
Board Room:				
	A	20 people[1]		250 S.F.
	B	20 people[1]		250 S.F.
Specialty Restaurant				
		85 seat[1] @ 15 S.F./ person	=	1275 S.F.
		Service: 7.5 S.F./seat	=	637.5 S.F.
Cafe/Coffee Shop				
		175 Seats[1] @ 15 S.F./person	=	2625 S.F.
		Service: 7.5 S.F./seat		1312.5 S.F.
Lobby Cocktail Lounge				
		45 seats @ 15 S.F./person	=	675 S.F.
Entertainment Lounge				
		125 seats[1] @ 15 S.F./person	=	1875 S.F.
Lobby) Administration) Service)		allow	=	9000 S.F.
		TOTAL BUILDING AREA		208,300 S.F.

Parking (1 space = 350 S.F.)

A. Guests (1/room)[2] = 375 @ 350 = 131,250 S.F.

B. Restaurant & Lounge (1/3 seats[2])

430 ÷ 3 = 144 x 350 = 50,400 S.F.

C. Conference (1335 persons/ 1 space per 4 people)

1335 ÷ 4 = 334 x 350 = 116,900 S.F.

D. Employees:

90 spaces @ 350 = 31,700 S.F.

TOTAL 301,700 S.F.

Calculations:

Building Footprint = 208,300 ÷ 3 = 69,434 S.F.

Parking Coverage = 301,700 S.F.

Landscape Coverage = .2 of Total Site Area

69,434 + 301,700 = .8 of Total Site Area

371,134 S.F. = .8 of Total Site Area

$\frac{371,134 \text{ S.F.}}{.8}$ = Total Site Area

463,917.5 S.F. (10.65 acres) = Total Site Area

Landscape Coverage = (.2) (463917.5)

= 92783.5 S.F.

Additional Land Required for an Additional 125 Rooms:

125 Rooms @ 468 SF/room = 58,500

125 parking spaces @ 350 SF/ space = 43,750

102,250 S.F.

102,250 = .8 of additional space required

$\frac{102,250}{.8}$ = Additional space required

127,812.5 SF (2.93 acres) = Additional space required

COMMERCIAL

Coverage Percentages:

Building Footprint	25%
Parking Coverage	60%
Landscape Coverage	15%

Data

- One parking space equals 350 S.F.
- Parking Required[2]: 1/175 S.F. Net Ground Floor

  1/175 S.F. Net Second Floor
- Net Building Area equals .8 of Gross Building Area
- Landscape Area equals .15 of Total Site Area
- ½ of the Building Footprint will be two-story
- The remainder will be one-story

Calculations:

x = Building Footprint

1.5x = Total Building Area Square Footage

(.8) (1.5x) = 1.2x = Net Building Area Square Footage

$$\text{Parking Coverage} = \frac{1.2x}{175} \times 350 = 2.4x$$

x + 2.4x = .85 of Total Site Area

3.4x = .85 of Total Site Area

$$x = \frac{.85 \text{ of Total Site Area}}{3.4}$$

RESTAURANT

Coverage Percentages:

Building Footprint	11.33%
Parking Coverage	68.67%
Landscape Coverage	20.00%

Data

- 22.5 S.F. Per Seat (15 S.F. for patron; 7.5 for service)
- 1 parking space per 3 seats[2]
- 2 employee parking spaces per 28 seats
- 1 parking space equals 350 S.F.
- Landscape Area = .2 of Total Site Area

Calculations:

$$x = \text{Building Footprint}$$

$$\frac{x}{22.5} \times \frac{1}{3} + \frac{8}{21} \times 350 = \text{Parking Coverage}$$

$$\frac{x}{22.5} \times \frac{8}{21} \times 350 = \text{Parking Coverage}$$

$$\frac{8x}{462} \times 350 = \text{Parking Coverage}$$

$$\frac{28000x}{462} = \text{Parking Coverage}$$

$$6.06x = \text{Parking Coverage}$$

$$x + 6.06x = \text{Parking Coverage}$$

$$7.06x = .8 \text{ of Total Site Area}$$

$$x = \frac{.8 \text{ of Total Site Area}}{7.06}$$

RESTAURANT COVERAGES FOR A TYPICAL TWO ACRE SITE

Landscape Coverage	20%	=	17424
Building Footprint	11.33%	=	9872
Parking Coverage	68.66%	=	59824

OFFICE PARK (3 story structure)

Coverage Percentages:

Building Footprint	18.5%
Parking Coverage	66.5%
Landscape Coverage	15.0%

Data

- One parking space equals 350 S.F.
- Parking required: 1/200 Net S.F. Ground Floor
  1/250 Net S.F. Second and Third Floor
- Net Building Area = .8 of Total Building Area
- Landscape Area = .15 of Total Site Area.

Calculations:

x = Building Footprint

3x = Total Building Square Footage

(.8) (3x) = 2.4x = Net Building Square Footage

Parking Coverage = $\frac{2.4x}{700}$ x 1050 = 3.6x

x + 3.6x = .85 of Total Building Area

4.6x = .85 of Total Building Area

$x = \frac{.85 \text{ of Total Building Area}}{4.6}$

INDUSTRIAL RESEARCH AND DEVELOPMENT

Coverage Percentages:

Building Footprint	34.5%
Parking Coverage	50.5%
Landscape Coverage	15.0%

Data

One employee per 300 S.F. of building.
One parking space per employee.
One parking space equals 350 S.F.
Landscape coverage equals .15 of the total site area.
One quarter of the building footprint will be two story.
The remainer will be one story.

Calculations:

x = Building Footprint
1.25x = Total Building Square Footage
.15 of Total Site Area = Landscape Coverage

$$\text{Parking coverage} = \frac{1.25x}{300} \times 350 = 1.4583333x$$

x + 1.4583333x = .85 of total site area
2.4583333x = .85 of Total Site Area

$$x = \frac{.85 \text{ of Total Site Area}}{2.458333}$$

INDUSTRIAL RESEARCH AND DEVELOPMENT

(Note: For this series of calculations a parking requirement of .7 parking spaces per employee as allowed in the City of Hayward Off-Street Parking Regulations[2] is used in lieu of one space per employee.)

Coverage Percentages:

Building Footprint	42%
Parking Coverage	43%
Landscape Coverage	15%

Data

- one employee for 300 S.F. of building
- .7 parking space per employee
- one parking space equals 350 S.F.
- landscape coverage equals .15 of total site area
- ¼ of the building footprint will be two story
- the remainder will be one story

Calculations:

x = Building Footprint

1.25x = Total Building Square Footage

.15 of Total Site Area = Landscape Coverage

$$\text{Parking coverage} = \frac{1.25x}{300} \times 350\,(.7) = 1.0208333x$$

$$x + 1.0208333x = .85 \text{ of Total Site Area}$$

$$2.0208333\,x = .85 \text{ of Total Site Area}$$

$$x = \frac{.85 \text{ of Total Site Area}}{2.0208333}$$

FOOTNOTES

1. Pannel, Kerr, Foster; Study of Potential Market Demand and Statements of Estimated Annual Operating Results for a Proposed Hotel to be Located at the Shorelands Project in Hayward, California; July, 1983.

2. City of Hayward; Off-Street Parking Regulations, Ordinance No. 77-016 C.S.; Adopted April 12, 1977.

3. City of Hayward; An Oedinance of the City of Hayward Providing for the Use of Land, Establishing Zoning Districts, and Regulating the Use of Land and Building Thereon, and Repealing All Ordinances in Conflict Herewith, Ordinance No. 209 C.S.; Adopted March 24, 1959.

4. J. De Chinara, Lee Koppleman; Urban Planning and Design Criterion;Second Edition; (New York: VanNostrand, Reinhold, 1975).

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