U.S. Department of
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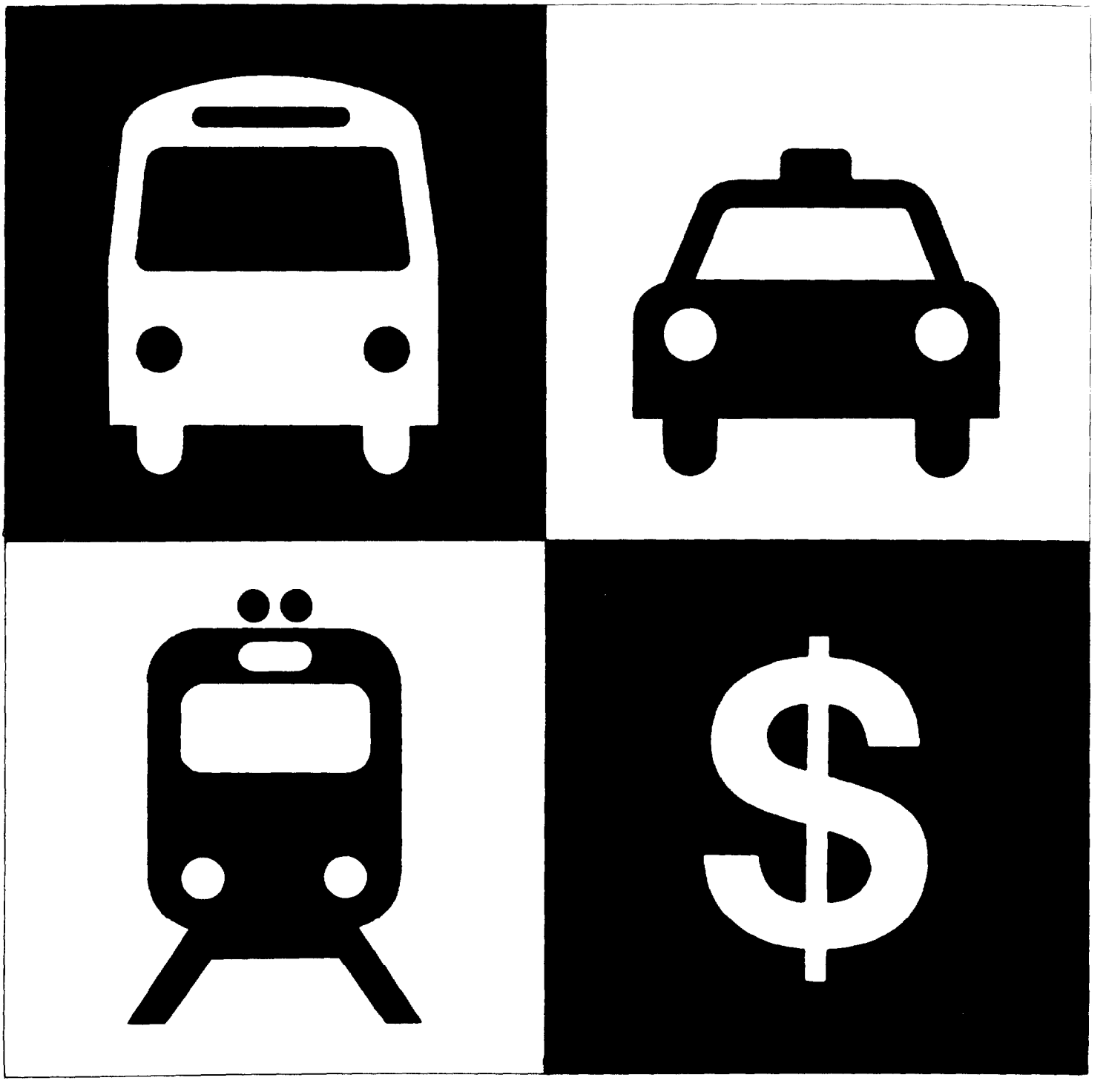
Serramonte Transit Center Study

June 1983



Serramonte Transit Center Study

Final Report
June 1983

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1. INTRODUCTION

A. Background

Serramonte Center is a very active and successful regional shopping center located just south of San Francisco in Daly City, San Mateo County, at the junction of Interstate Highway 280 and State Highway 1. Figure 1-1 is a vicinity map showing the location of the Center and the principal streets and highways in the area.

The Center has three major tenants--Macy's, Montgomery Ward and Mervyn's--and about 130 other stores. It has approximately 860,000 square feet of retail floor area, and more than 4,600 parking spaces.

There is a bus shelter in the Center's parking lot, near the Mervyn's store. Several bus lines of the San Mateo County Transit District (SamTrans) make regular stops at the shelter, and a significant number of the Center's shoppers and employees use the bus service.

Several years ago, the owners began planning a large expansion of the Center, including additional stores, new parking structures, and a new bus station. As part of the plan, the owners were considering the possibility of an exclusive bus road through the site, and a larger bus terminal located closer to the center of retail activity.

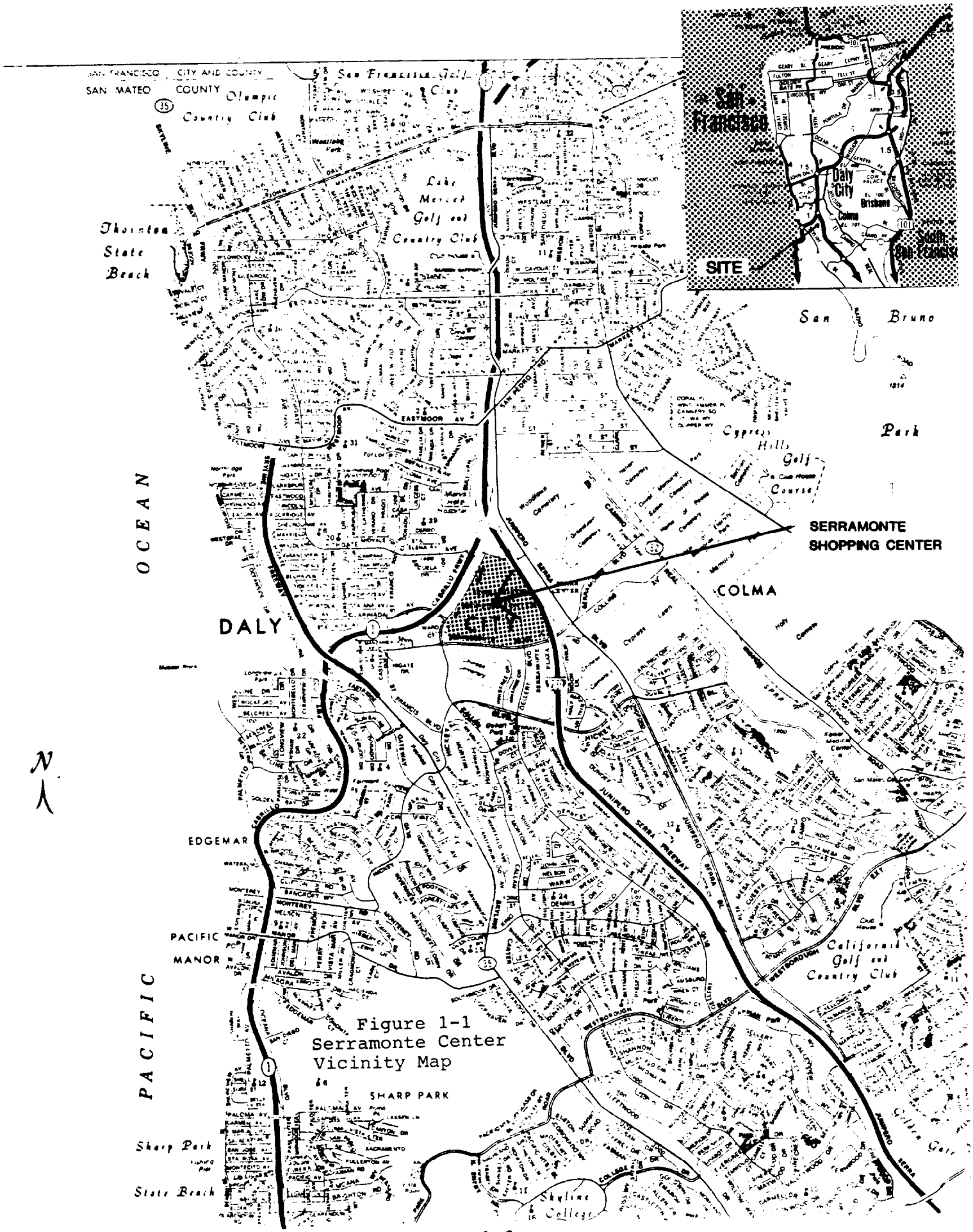


Figure 1-1
Serramonte Center
Vicinity Map

Discussions were held between representatives of the Center and the Transit Agency to establish the design requirements of the bus facilities and determine the feasibility of their participation jointly in making improvements for the operation of publicly owner buses on the privately-owned site.

Although both parties (the Center and the Agency) were interested in pursuing the project for development of the transit facilities, a number of significant questions were raised that had to be answered before commitments could be made. Further study was needed to provide the answers. The Urban Mass Transit Administration (UMTA) decided that results of such a study could be useful to other public transit agencies in planning service to other shopping centers and agreed to provide funding for the study.

Because of the changes in economic conditions that were taking place while authorization for the study was still pending, the Center found that its plans for expansion would have to be postponed. Although it became clear at that time that the study could not result in a specific plan for construction of a new transit station on the Serramonte site, the Transit Agency decided to go ahead with the study because it would help to clarify design requirements for the station and its access arrangement. The Center agreed to participate in the study on that basis.

B. Purpose and Scope of Study

The purposes of the study are to determine, from this particular case--the Serramonte Center plan-- guidelines for achieving the successful design and operation of a bus station and bus access arrangement on a shopping center site, including identification of the important problems and issues involved, and suggestion of methods to overcome the problems and achieve the construction of such a project.

The scope of the study is necessarily limited by budget and time schedule, and by the fact that the construction of an actual bus station on the site is not likely to occur in the near future. Because there are no planners, architects, or engineers now designing the expansion plan for construction, the design possibilities that can be drawn are only sketches of the future construction that may actually occur. The actual arrangements of building areas and parking structures can only be assumed in a general way at this time.

The limitations on the scope of the study made it necessary to select only a few important issues for closer attention. Other ideas that might have been useful, profitable or interesting to pursue had to be put aside because of time, budget, or other, more particular interests of the Center and the Agency. However, most of the ideas considered in this study are listed in the Closing Discussion of this report with suitable notations on their possible significance and the reasons why they were set aside from further consideration in this study.

C. Method of Study

The consulting team interviewed managers and staff members of Serramonte Center and SamTrans to determine their interests and concerns about bus facilities and services on the Serramonte site, and to identify possible issues for further consideration in the study. The issues were then reviewed at a joint meeting of Center and Agency representatives, and certain issues were selected for further study.

A survey of shopping center employees was conducted to determine the conditions of bus usage by workers on the site.

Sketch plans were prepared for alternative station locations and arrangements. The plans were reviewed separately, and then jointly, with the Center and the Agency in order to determine likely problems and preferences, and suggest methods of overcoming the problems.

D. Organization of the Report

Following this introduction, the report is divided into six parts:

- A summary of the principal conclusions.
- Background data on the existing site and transit services, and information on the likely options for future expansion of the Center.

- Discussion on results of the first round of interviews and the problems, issues and ideas discussed.

- Presentation of the results of the employee and transit user surveys and projections of ridership trends.

- Presentation of alternative station locations and designs, and comments resulting from Center and Agency reviews of the alternative sketch plans.

- Concluding discussion on the results of the study and lessons learned for possible use in providing transit facilities and services at other shopping centers.

2. SUMMARY OF CONCLUSIONS

EXECUTIVE SUMMARY

Following is a summary of the principal conclusions of the study, which include comments on benefits of transit service to shopping centers, criteria for the location and design of a new transit center, recommendations for planning and implementation, and possible methods of funding. These conclusions can be applied by SAMTRANS to the other existing and proposed shopping centers within its service area.

The primary benefits of transit service to the shopping center are additional shoppers (those who would not normally come by automobile), and reduced parking requirements. These lower parking requirements can increase the amount of land that is available for shopping center development. The benefits of the selected transit center to the transit agency include increased operating efficiency, less automobile congestion and conflict, increased ridership and improved headways.

In general, both SAMTRANS and Serramonte staff agreed that the ideal location for the transit center would be at the center of shopping activity, and that ridership might be reduced if the transit facility was located at the perimeter of the shopping center. However, they also agreed that this could greatly add to the on-site traffic congestion unless an exclusive busway was installed (similar to the one at Eaton Center in Toronto).

The principal reasons given for selecting the preferred station location were:

1. Elimination of conflicts between buses and automobiles within the shopping center parking lot.

2. Reduction of travel time for buses.
3. Elimination of bus damage to interior circulation roads on shopping center site.
4. Provision of a permanent facility that will allow buses to operate independently of the Center and will not interfere with the Center's freedom to make later decisions on future expansion of retail floor area and parking.
5. Placement of the bus passenger waiting area a sufficient distance away from storefronts and retail entrances to avoid crowding and vandalism at those locations.

Other factors that were established as conditions to be considered in making decisions on location and design were:

1. Analysis of costs and benefits.
2. Provision of sufficient bus positions and layover space for projected future bus volumes.
3. Pedestrian connections to the shopping center and the ground level with special provisions for handicapped and elderly persons.

Transit center design criteria included:

1. Safe and exclusive access to the transit center for SAMTRANS buses without mixing with private automobile traffic.
2. The provision of adequate berths based on existing and future ridership projections plus adequate space for the layover of buses, future expansion and flexibility.
3. Provisions for all standard bus operational criteria (turning radii, ramps, slopes, etc.).
4. Provisions for the convenience and protection of waiting passengers.

5. Full access for handicapped and elderly passengers.
6. The provision of information maps and schedules for passenger orientation.
7. The provision of ancillary facilities, including telephones, trash receptacles, and vending machines.
8. The provision of a sheltered and attractive pedestrian walkway between the transit center and the shopping mall as a means to link these two facilities.

In addition to the above criteria, Serramonte management required the transit center design to provide benefits in terms of revenue production through the lease of retail space.

To succeed, planning for transit centers at new or renovated shopping centers must (1) be consistent with established transit district policies guiding these activities, (2) begin at the earliest possible stage of conceptualization about the new or renovated shopping center, and (3) demonstrate potential benefits to both the private developer and the transit agency. Transit planning for shopping centers should be improved to avoid locating bus stops at the last possible moment and then only when developers are forced to by regulations of local municipalities and/or the requirements of Environmental Impact Report mitigating conditions. As a consequence of the latter approach, bus stop locations are often negotiated rather than planned.

Planning for transit centers must recognize that transit operations and decision making are based on meeting revenue projections in a cost effective manner. Planning at shopping centers is based, to a major degree, on the leasing arrangements that exist between shopping center owners and the major department store tenants. These leases, which stipulate parking requirements and other conditions, often put shopping center owners into untenable positions with local

cities and public agencies who have developed transit-oriented parking policies. To become more effective in coordinating and integrating transit service with shopping center planning and development, transit agencies should take an advocacy role in providing transit service to shopping centers. Transit agency staff should be moving to an increasingly prescriptive and/or predictive position, that is, one in which the transit agency staff seeks out developers who are about to plan new and/or renovated shopping centers. Concurrently, transit agency staff should initiate educational and communications efforts to inform shopping center and other developers of the advantages and benefits to them of providing transit service to their patrons and employees.

Potential methods for financing the transit center include both public and private sources. Public sources include the federal government, the state of California, the city of Daly City, and/or SAMTRANS itself. The most likely private source is Serramonte Center.

Federal and state funds require inclusion of the project in the local and state Transit Improvement Program (TIP). The Metropolitan Transportation Commission (MTC) allocates these funds to transit agencies within the Bay region.

Local public sources of funds may include the issuance of revenue bonds to be repaid by an allocation of revenue generated by the improvements, and special assessment districts used to generate funds for specific projects that will create special benefits to identifiable users or land owners. Private funds for the transit center could also be contributed directly by Serramonte Center. This arrangement would presumably be feasible for the center if additional revenues from the transit center (from rentals of space in the facility or added sales to new transit riders) exceeded its cost in providing the transit facilities.

A. Benefits of Transit Service

Although Serramonte Center is a suburban shopping facility and is primarily oriented to shopper access by automobiles from adjacent arterial streets and freeways, there has been effective local bus service to the center since its early years. Bus services are now an established feature of the center, and buses carry a significant percentage (6.6% and 16.5%, respectively) of the center's shoppers and employees. The benefits to the Center are additional shoppers (those who would not normally come by automobile), and a reduced parking requirement (from those shoppers and employees who would have used automobiles if the bus service had not been available). Lower parking requirements can increase the amount of land that can be developed. The benefits of the transit center to SAMTRANS include increased operating efficiencies, less auto conflicts, increased ridership and improved headways.

B. Location and Design Criteria for the Transit Center

Location Criteria

In general, both SAMTRANS and Serramonte staff agreed that the ideal location for the transit center would be at the center of shopping activity, and that ridership might be reduced if the transit facility was located at the perimeter of the shopping center. However, they also agreed that this could greatly add to the on-site traffic congestion unless an exclusive busway was installed (similar to the one at Eaton Center in Toronto).

In fact, Serramonte's former long-range development plans included an exclusive busway that delivered passengers on a second level at the center of the shopping complex. Among the many merits of this approach was the separation of bus and automobile traffic, the delivery of passengers at the heart of shopping activity, increased transit operating efficiencies, improved safety and the elimination of bus

damage to interior circulation roads on the shopping center site. While Serramonte has left its long-range options open to include this exclusive busway approach, it has been eliminated from current planning for financial reasons.

Both Serramonte and SAMTRANS independently chose the same site as their preferred location for a new bus station. The site is on the south edge of the shopping center near the southeast corner of Montgomery Ward. A bus station at this location is referred to as Plan E in this study, and is shown in Figure 8-6.

Serramonte management's primary interest in the new station location was to continue the existing bus service while removing buses from the internal circulation roads where they conflict with automobile traffic and cause pavement damage ranging from $25,000 to $35,000 per year. (It should be noted that delivery trucks also cause pavement damage.) Other locational concerns included reducing potentials for vandalism by keeping the transit center away from the fronts of retail stores, and providing potentials for benefits (e.g. revenues for new leasible space, the provision of additional parking, reductions in the cost of construction and maintenance of access roads, etc.). A major factor in most decisions made by Serramonte management was their legal relationship (leases) with their major tenants. These leases specify the number of parking spaces to be provided by Serramonte Center and their proximity to the store. Potential transit center locations that might require approval of the major tenant and in some cases renegotiations of their primary leases, were not viewed enthusiastically by Serramonte management. Further, transit center locations that kept options open for long range future expansion programs were viewed more favorably than those that closed these options and lost future development opportunities. Another locational issue was that the new transit center should not be located so that it might block the visual exposure of

any of the stores belonging to the major tenants.

SAMTRANS' primary interest was to simplify and speed up bus operations by eliminating the extra travel distance and avoiding the traffic conflicts that accompany service to the existing on-site bus stop near the center of the shopping center site. Although concerns were raised that it might reduce ridership, SAMTRANS staff preferred locations where their buses were not required to be routed through the site, and where they had exclusive access to the transit center without mingling with private automobile traffic. Their primary concerns were about maintaining or improving existing headways and bus frequencies and bus frequencies in comparison with the existing situation, and providing adequate layover space for buses.

Both SAMTRANS and Serramonte staff shared concerns about the cost of a new transit center and how it might be financed. These concerns were reflected in deciding between transit centeer location alternatives to identify those that would be less costly and/or that presented potentials for revenue generation to offset the cost of the transit center.

The principal reasons given for selecting the preferred station location are:

1. Elimination of conflicts between buses and automobiles within the shopping center parking lot.

2. Reduction of travel time for buses.

3. Elimination of bus damage to interior circulation roads on the shopping center site.

4. Provision of a permanent facility that will allow buses to operate independently of the Center and will not interfere with the Center's freedom to make later decisions on future expansion of retail floor area and parking.

5. Placement of the bus passenger waiting area a sufficient distance away from storefronts and retail entrances to avoid crowding at those locations. While all agreed on the value of bus stop locations close to store entrances, prior experience at Serramonte has shown that crowding and vandalism can occur if it is located immediately adjacent to the store's doorway.

Other factors that were established in the workshops as conditions to be considered in making decisions on location and design of the station are:

* Analysis of costs and benefits

* Provision of sufficient bus positions and layover space for projected future bus volumes

* Pedestrian connections to the shopping center and the ground level with special provisions for handicapped and elderly persons.

Design Criteria

As in the locational criteria described above, SAMTRANS staff focused on operational issues in regard to the design of the transit center itself. These issues included: safe and exclusive access to the transit center for SAMTRANS buses without mixing with private automobile traffic, the provision of adequate berths based on existing and future ridership projections (7 berths including 1 articulated bus), plus adequate space for the layover of buses (5-6 buses), future expansion and flexibility. In addition to the requirement that all standard bus operational criteria (turning radii, ramp slopes, etc.) be met, conventional bus station criteria were required in terms of protection for waiting passengers (wind, sun and rain), safety and security, lighting, visibility and the provision of adequate space for the boarding and disembarking of buses. Full access for handicapped passengers to the transit center was required as was the provision of information maps and schedules for the orientation passengers. Ancillary facilities, including telephones, trash receptacles and vending machines were also recommended. A sheltered and attractive pedestrian walkway between the transit center and the shopping mall was suggested as a means to link these two facilities.

Serramonte management required the transit center design to provide benefits in terms of revenue production through the lease of retail space at the lower levels. In this regard, they pointed out that the minimum floor to ceiling height for retail stores at Serramonte Center is 10 feet with an additional 2 to 3 feet required between the ceiling and the roof for mechanical equipment. They further required that the transit center be designed in a manner so that waiting passengers are not loitering directly in front of existing stores, and that the transit center structure does not block the visibility of nearby stores. A conceptual design for this transit center is illustrated in Figures 9-1, 2, 3 and 4.

C. Procedures and Methods for Planning and Implementing the-Transit Center

To succeed, planning for transit centers at new or renovated shopping centers must (1) be consistent with established transit district policies guiding these activities (no policies on providing transit service to shopping centers currently exist at SAMTRANS), (2) begin at the earliest possible stage of conceptualization about the new or renovated shopping center, and (3) demonstrate potential benefits to both the private developer and the transit agency. Transit planning for shopping centers should be improved to avoid locating bus stops at the last possible moment and then only when developers are forced to by regulations of local municipalities and/or the requirements of Environmental Impact Report mitigating conditions. As a consequence of the latter approach, bus stop locations are often negotiated rather than planned.

In order to plan for transit service at shopping centers, transit agencies must have:

1. Clear policies related to providing service to shopping centers, and mechanisms to implement these policies, (To this end, the consultants concur with the recommendation of staff of the Metropolitan Transportation Commission that SAMTRANS address shopping center development policies in its Short Range Transit Plan.)

2. Policies on providing service on private property,

3. A key staff person identified who is responsible for planning and providing new service to proposed, new and existing shopping centers, and

4. Mechanisms to handle requests for coordination and planning of new service to proposed shopping centers.

In this regard, transit agencies should work closely with local planning agencies to develop mechanisms for linking transit service to general transportation planning (e.g. using transit to reduce local traffic volumes and congestion, mechanisms for attracting more of the "choice" market -- those who can chose between transit and driving their autos).

Planning for the transit center must recognize that SAMTRANS operations and decision-making are based on meeting its revenue objectives in a cost-effective manner. Planning at Serramonte Center is based, to a major degree, on the leasing arrangements that exist between them and their major department store tenants. These leases, which stipulate parking requirements and other conditions, often put shopping center managers into untenable positions with local cities and public agencies who have developed transit-oriented parking policies. Where planning for a new transit center may require modifications in the leasing arrangements, the center exposes itself to the risk of renegotiating these leases. Therefore, shopping center managers may be reluctant to pursue planning activities that may require approval of their major department store tenants. Further, shopping center managers and senior transit agency staff seem to have developed set views regarding the value of (1) transit service to shopping centers, (2) transit service on private property, (3) the loss of parking spaces for transit service, and (4) locating bus stops near the heart of shopping activities, due to their prior professional experiences. There appears to be a significant need for improved communication and education of the potential mutual benefits to transit agencies and shopping

centers of providing transit to shopping centers. The potential to reduce required parking spaces, and thereby increase Gross Leasable Area at shopping centers, through the use of bus transit needs to be demonstrated to shopping center managers. Related communication/education issues include transit planning to reduce local and on-site traffic congestion, potential benefits from park-ride and other transit related parking solutions, and the importance of transit service to the shopping center's shoppers and employees. There also is a need for transit agencies and shopping center management to communicate regularly (or to be in communication) regarding transit problems and issues, changes in service, special shopping center events, new routings and schedules, security and related issues.

To become more effective in coordinating and integrating transit service with shopping center planning and development, SAMTRANS should take an advocacy role in providing transit service to shopping centers. SAMTRANS planning staff should move into an increasingly prescriptive and/or predictive position, that is, one in which SAMTRANS seeks out developers who are about to plan new and/or renovated shopping centers. This approach also has marketing advantages. SAMTRANS' long range planning staff should take this advocacy role and contact developers of new projects from information in published reports, professional information and other sources.

Parallel to this advocacy mode, SAMTRANS should initiate an educational and communications effort to inform shopping center and other developers of the advantages and benefits to them of providing transit service to their patrons and employees.

Once the planning for the transit center has been completed, and the requisite approvals have been obtained from the transit agency's policy making board and the shopping center management, implementation of the transit center can proceed on a conventional path. This includes:

1. Negotiating an agreement between the transit agency and the shopping center defining each party's responsibilities and the financing mechanisms.

2. Identification of the key individual at the transit agency and the shopping center who will have responsibility for the transit center's implementation.

3. Development of a detailed list of planning requirements for the final design of the transit center -- possibly with the advice of transit riders.

4. Engaging architectural and engineering consultants to design the center with interim review points so that the adequacy of the design and the budget estimates can be confirmed.

5. Following approvals by all parties concerned, and confirmation of the final cost estimate, the traditional construction bidding process can be undertaken. Upon identification of a successful bidder, and with the approval of all parties, the transit center can be constructed - depending on the availability of funds for this purpose.

D. Financing the Transit Center

Potential methods for financing the transit center include both public and private sources. Public sources include the federal government, the state of California, the City of Daly City, and/or SAMTRANS itself. The most likely private source is Serramonte Center.

Federal capital funds are derived from sections of the Urban Mass Transportation Act and require inclusion in the local and state Transportation Improvement Program (TIP). Under this program, a project must have a commitment for a non-federal share of funding. This non-federal share may be derived from funds from other governments (i.e. state and local sources) or from private sources. The primary potential source of state funds for a transit center is AB 1335, which disburses 30% of funds directly to transit operators, such as SAMTRANS, and the remaining 70% to the region. The Metropolitan Transportation Commission (MTC), which is the regional recipient in the Bay Area, reserves its allocation for capital expenditures. Again, to be awarded state funds, a project must be included in the TIP.

Local public sources of funds may come from a city, a transit operator or from a special district. One local possibility is the issuance of revenue bonds to be repaid by an allocation of revenue generated by the improvements paid for by the bonds (i.e. increase sales tax revenues). Special assessment districts have increasingly been used to generate funds for specific projects that will create special benefits to identifiable users or land owners. The creation of a special assessment district allows for the issuance of bonds, at a favorable interest rate, that will be repaid by assessments against the property that is benefitted. A special assessment district may be created by a city, and requires the assent of the owners of at least

60% of the property area that will be included in the district. Revenues from special assessment district bonds could be used for 100% of the capital cost of a transit facility.

Private funds for the transit center could be contributed directly by Serramonte Center. This arrangement would presumably be feasible for the center if additional revenues from the transit center - from rentals of space in the facility or added sales to new transit riders - exceeded its cost in providing the facilities.

3. EXISTING CONDITIONS

OVERVIEW

The existing conditions in and around the Serramonte Shopping Center are presented to portray the current situation which formed the context for the study. The need for a transit center at Serramonte was a given to this study, and the factors related to the existing conditions are not presented in order to justify the need for this transit center.

Serramonte Shopping Center, located just south of San Francisco, occupies a 72 acre site. The center, opened in 1968, was planned to accommodate 760,000 square feet of leasible space. It contains a Macy's, Wards, Mervyn's, and QFI-Longs stores as major tenants.

The primary market area for Serramonte Center encompasses most of the peninsula from the Golden Gate to the northern edge of San Mateo. A survey of shoppers on the mall, conducted in December, 1980 and January, 1981, indicated that 75% of those questioned lived in the area shown in Figure 3-2. The distribution of respondents' household income indicates that the largest income category was $25,000-$49,999, with almost 33% of all interviewees. A slightly smaller proportion--30%--had incomes between $15,000-$24,999, and about 26% had household incomes of less than $15,000.

Serramonte Center has constructed a bus shelter for SAMTRANS passengers. This shelter was designed by the center's consultants with the advice and cooperation of SAMTRANS staff. The facility was completed in 1978 and was paid for by the center. This bus shelter is located just off the southeast corner of Mervyn's store and is oriented in an east-west direction. This stop is now used by four of SAMTRANS' bus routes--10S,

20C, 20J and 21A--which provide a total of 183 bus trips daily to the center on weekdays. Route 21B also enters the shopping center site but does not stop at the bus shelter. It provides 25 bus trips daily.

A survey of pedestrians at Serramonte Center in December, 1980 and January, 1981 indicated that about 6.6% of the people at the center had ridden SAMTRANS to the center on the day of the interview. SAMTRANS was the second most predominant form of transportation to Serramonte after private automobiles. The survey indicated that people from Daly City, South San Francisco and Pacifica are more likely than the average to ride SAMTRANS. The income characteristics of Serramonte SAMTRANS riders indicated that people who live in households that had incomes of less than $15,000 were more likely than the average respondent to ride SAMTRANS to the center, but that people in all other income groups were less likely than average. Thus, it appears that income is definitely a factor that influences people to ride transit to the center.

This survey also indicated that people 61 years of age or older were more likely than average to ride SAMTRANS to Serramonte. The survey showed that people in that age group comprised 11.2% of all respondents, but 23.5% of respondents who rode SAMTRANS. The survey also indicated that 16.5% of Serramonte's employees ride SAMTRANS, about 2.5 times the overall average of SAMTRANS riders (6.6%). This last finding--that center workers are significantly more likely than shoppers to use transit--is an important one to both SAMTRANS and the shopping center.

As part of its initial planning work to prepare for a large expansion project, Serramonte Center began a study of the shopping center's parking and circulation system to determine what limitations the traffic capacity of the access system would place on the proposed expansion. This study also looked for ways to improve the internal circulation system and overcome

some of the existing circulation problems. The resulting Parking and Circulation Improvement (PCI) Plan has been approved by the major tenants and is to be implemented when short term expansion projects require, or when existing road and parking areas require major maintenance or repairs. The proposed PCI Plan, illustrated in Figure 3-7, provides about 4,900 parking spaces, including some small car spaces.

Although the transit center was a given to this study, the information and data gathered and presented in this Existing Conditions section was valuable to the study in terms of identifying the types of users who would be using the transit center, the distances that they traveled, the bus routes they would use and the peak periods of transit use, and related information. This information was used, in coordination with SAMTRANS staff, in sizing the transit center in terms of the number of berths required, layover spaces, etc. The existing conditions data was also useful in identifying current and future areas of bus/auto traffic congestion and access points.

A. Description of Existing Serramonte Shopping Center

Serramonte Shopping Center is located in Daly City, California just south of San Francisco. It lies in the northern part of San Mateo County, the primary service area for SAMTRANS. The Center's 72 acre site was created in 1966 to provide commercial support to the rapidly growing residential development in the area. Market research established a need to build a regional center with two major tenants (department stores), and because of the cool and foggy weather, a decision was made to build an enclosed mall.

The original center was planned to accommodate 760,000 square feet of leasable space. In 1968, the Center opened with Macy's, Ward's and QFI-Long's anchoring the three malls. In 1972, negotiations commenced with Mervyn's and in 1973, the

Mervyn's wing was opened. In 1976-77, a decision was made to enclose the present North and South Courts in the Mervyn's Wing, and to expand the parking area by excavating the hill to the west and erecting a retaining wall which could serve as the base for a parking deck.

Primary regional access to Serramonte Center is provided by Interstate 280 which is located immediately adjacent to the east. This major north-south freeway connects the Peninsula areas of the San Francisco Bay region to the south with the City of San Francisco and areas to the north. Additional freeway access from the western parts of the Peninsula is provided by State Route 1 (Cabrillo Freeway) which lies to the west of the Center and intersects with Interstate 280 just north of the site (see Figure 1-1). This freeway approach is lightly used to gain access to the Center at present.

The site is primarily entered and exited via the Gellert Boulevard entrance (see Figure 3-1).

The next major entry is via Serramonte Boulevard at Montgomery Ward's, and at Callan Boulevard and Southgate Avenue near Macy's. The last two listed entries have the lowest traffic flow and are the most attractive access points to local residents.

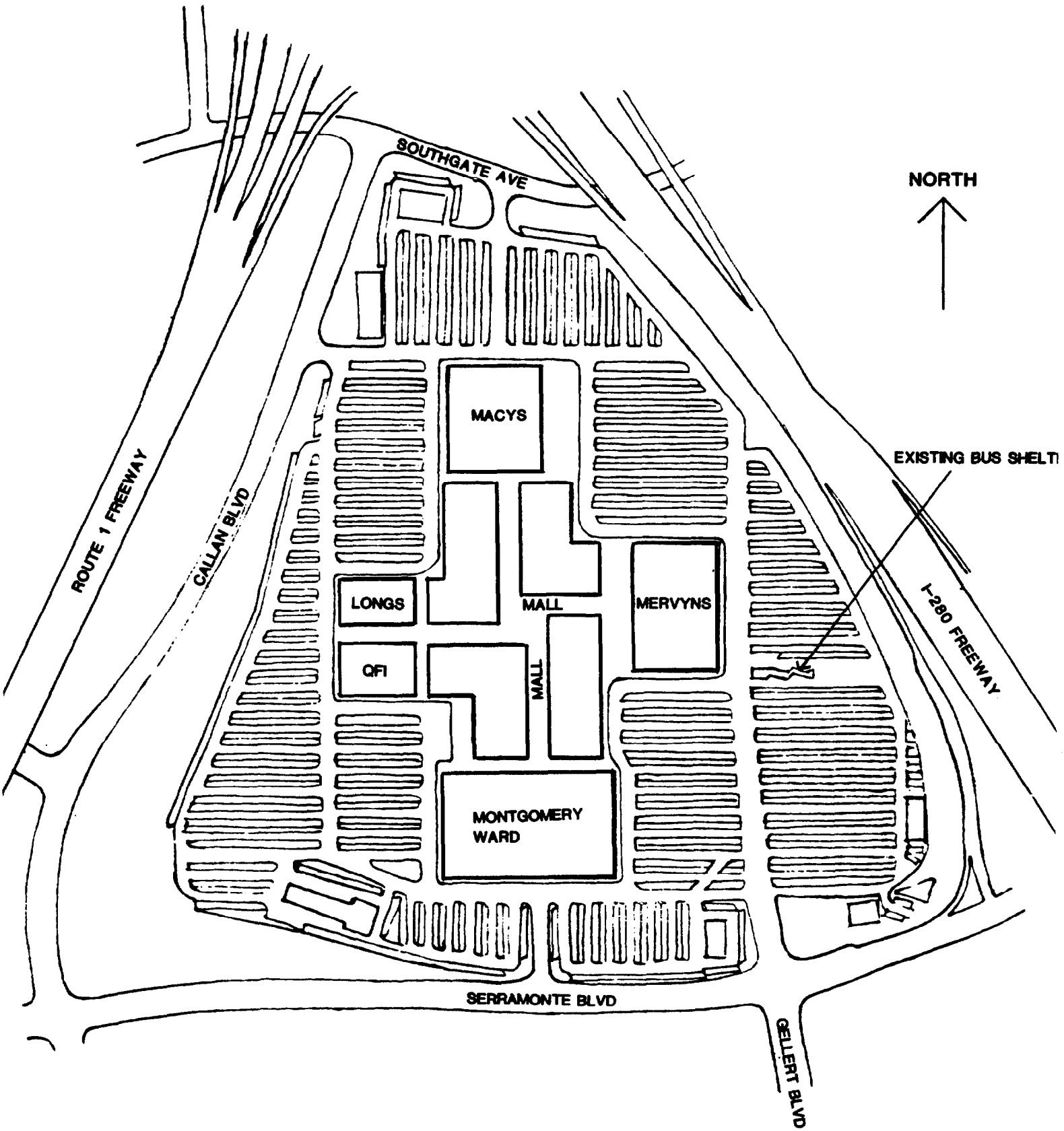


Figure 3-1 Plan of Serramonte Center Today

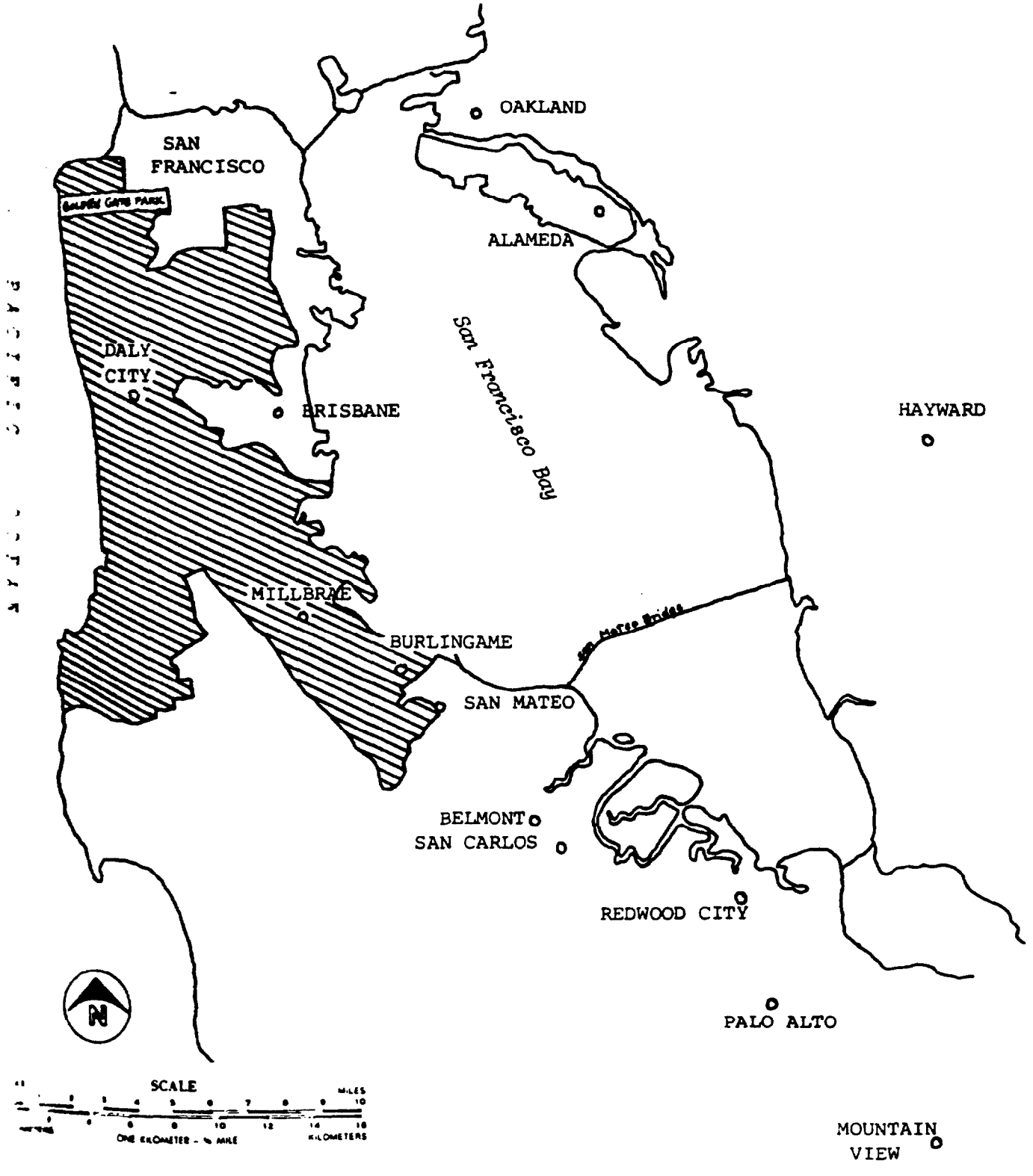
B. Market Area Boundaries and Market Characteristics

The primary market area for Serramonte Center encompasses most of the peninsula from the Golden Gate to the northern edge of San Mateo. It includes the cities of Daly City, Pacifica, South San Francisco, San Bruno, Millbrae and Burlingame and a portion of San Francisco. This area is shown in Figure 3-2 According to a survey of license plates on automobiles in the Serramonte parking lot in October 1980, 74 percent of the vehicles were registered at addresses within the primary market area. A survey of shoppers on the mall, conducted in December 1980 and January 1981, indicated that 75 percent of those questioned lived in the area shown on the map. A further breakdown of shoppers' places of residence is presented in Table 3-1

Characteristics of Serramonte shoppers were also described by their responses to the survey conducted on the mall during December 1980 and January 1981.

FIGURE 3-2

The Primary Market Area of the Serramonte Shopping Center



Source: Serramonte Shopping Center license plate survey data received from Gelsar, Inc.; Gruen Gruen + Associates; and California State Automobile Association.

TABLE 3-1

Place of Residence of Serramonte Shoppers

City	License Plate Survey (October 1980)		Shopper Survey (Dec. 1980 and Jan. 1981)	
	Number	Percent	Number	Percent
San Francisco (part)*	243	27.3	440	29.1
Daly City	230	24.8	381	25.2
Pacifica	77	8.3	142	9.4
South San Francisco	75	8.1	104	6.9
San Bruno	30	3.2	41	2.7
Millbrae	18	1.6	13	0.1
Burlingame	24	2.6	7	0.05
Total Primary Market Area	697	75.2	1,128	74.6

Note: Percentages shown are for total market area.

*Includes zip code areas 94110, 94112, 94116, 94121, 94122, 94127, 94131, 94132 and 94134.

Source: Gruen Gruen + Associates, Serramonte Center Market Analysis, February 1981

The descriptions presented below are based on interviews with 1,552 shoppers during the two months. Shoppers tended to come from "family" households (that is, households with one or more children living at home); 42 percent of the interviews fell into this category. This proportion is much higher than the Bay Area proportion of 28 percent and therefore indicates that Serramonte has strong appeal to the family households. The distribution of respondents' household types is shown in Table 3-2. The average household size of respondents was 3.2.

The distribution of respondents' household incomes is summarized in Table 3-3. The largest income category was $25,000-$49,999, with almost 33 percent of all interviewees. A slightly smaller proportion - 30 percent - had incomes between $15,000 and $24,999, and about 26 percent had household incomes of less than $15,000.

TABLE 3-2

Household Types of Serramonte Shoppers

Type of Household	Percent of Respondents
Single Person	12.1
Husband-Wife	20.0
Family	42.5
Single Parent	5.5
Unrelated Adults	11.6
Other*	8.4
TOTAL	100.1

*Includes 0.2 percent refused to answer.

Source: Gruen Gruen + Associates, Serramonte Center Market Analysis, February 1981

TABLE 3-3

1980 Household Income of Serramonte Shoppers

Income Group	Percent of Respondents
Less than $15,000	26.0
$15,000-$24,999	30.0
$25,000-$49,999	32.7
$50,000 or more	11.3
TOTAL	100.0

Note: 6.2 percent non respondents are allocated proportionally among income groups.

Source: Gruen Gruen + Associates, Serramonte Center Market Analysis, February 1981

C. SamTrans Service to Serramonte Center

The privately-owned Northgate Transit Company served Daly City and extended into South San Francisco, San Francisco, Colma and Pacifica and provided bus service to Serramonte Center from an early stage in the Center's development. SamTrans acquired the Northgate company in 1976, and took over service in the Daly City area in January 1977, including stops on the Serramonte Center site at the curb on the east side of Mervyn's.

Northgate had used small buses. SamTrans' larger buses added to problems of bus activity and waiting passengers at Mervyn's east entrance. The shopping center owners decided to solve these problems by moving the bus stop away from the curb. The Center built a new, curbed bus stop in its present position, oriented in an east-west direction just off the southeast corner of Mervyn's. This bus stop facility has a saw-tooth curb arrangement for buses and a shelter for waiting passengers. It was designed by the Center's consultants with the advice and cooperation of SamTrans staff. The facility was completed in 1978 and was paid for by the Center.

The stop is now used by four of SamTrans' bus routes -- 10S, 20C, 20J, and 21A -- which provide a total of 183 bus trips daily to the Center on weekdays. Route 21B also enters the shopping center site but does not stop at the bus shelter. It provides 25 bus trips daily. Bus routes that go into the Center are indicated in Figure 3-3. Additional bus routes that go past the Center but do not enter it are shown in Figure 3-4. Table 3.4 lists headways and the number of trips daily for each of the bus routes that go into the Center or past it.

Figure 3-5 is a map of the bus routes that serve the Center, showing the streets they use, and the outer areas they reach. Figure 3-5 compares the bus route service area to the primary market area of the Center, showing that the bus routes to Serramonte Center serve a relatively small proportion of the Center's primary market area. Furthermore, most of the bus routes are circuitous with long headways, so that, even in those areas where bus service is provided, the service is not competitive, in terms of time and convenience with the use of an automobile.

TABLE 3-4

SAMTRANS BUS ROUTES TO AND FROM SERRAMONTE CENTER

Route No. and Direction	Headways in Minutes A.M.	Midday	P.M.	Total Bus Trips Daily (weekday) To the Center	From the Center	Times of First and Last Bus
Stops at Bus Shelter						
10S	30	60	60	10	10	9:11 a.m. 4:15 p.m.
20C	15	20	5-10	55	52	5:45 a.m. 10:10 p.m.
20J NB	20	30	20	33	33	6:20 a.m. 10:30 p.m.
20J SB	20	30	20	33	33	7:15 a.m. 10:15 p.m.
21A NB	30	30	30	25	25	7:26 a.m. 7:26 p.m.
21A SB	30	30	30	27	27	7:00 a.m. 8:30 p.m.
Totals				183	180	
Stops at Other Point in the Center						
21B NB	60	60	60	11	11	8:13 a.m. 6:13 p.m.
21B SB	60	60	30	14	14	6:35 a.m. 6:35 p.m.
Totals				25	25	
Adjacent to But Outside Center						
3C NB	30	No Service	30	9	9	6:30 a.m. 6:20 p.m.
3C SB	30	No Service	30	9	9	7:15 a.m. 6:35 p.m.
Totals				18	18	

Source: SamTrans 1982 route maps and time tables.

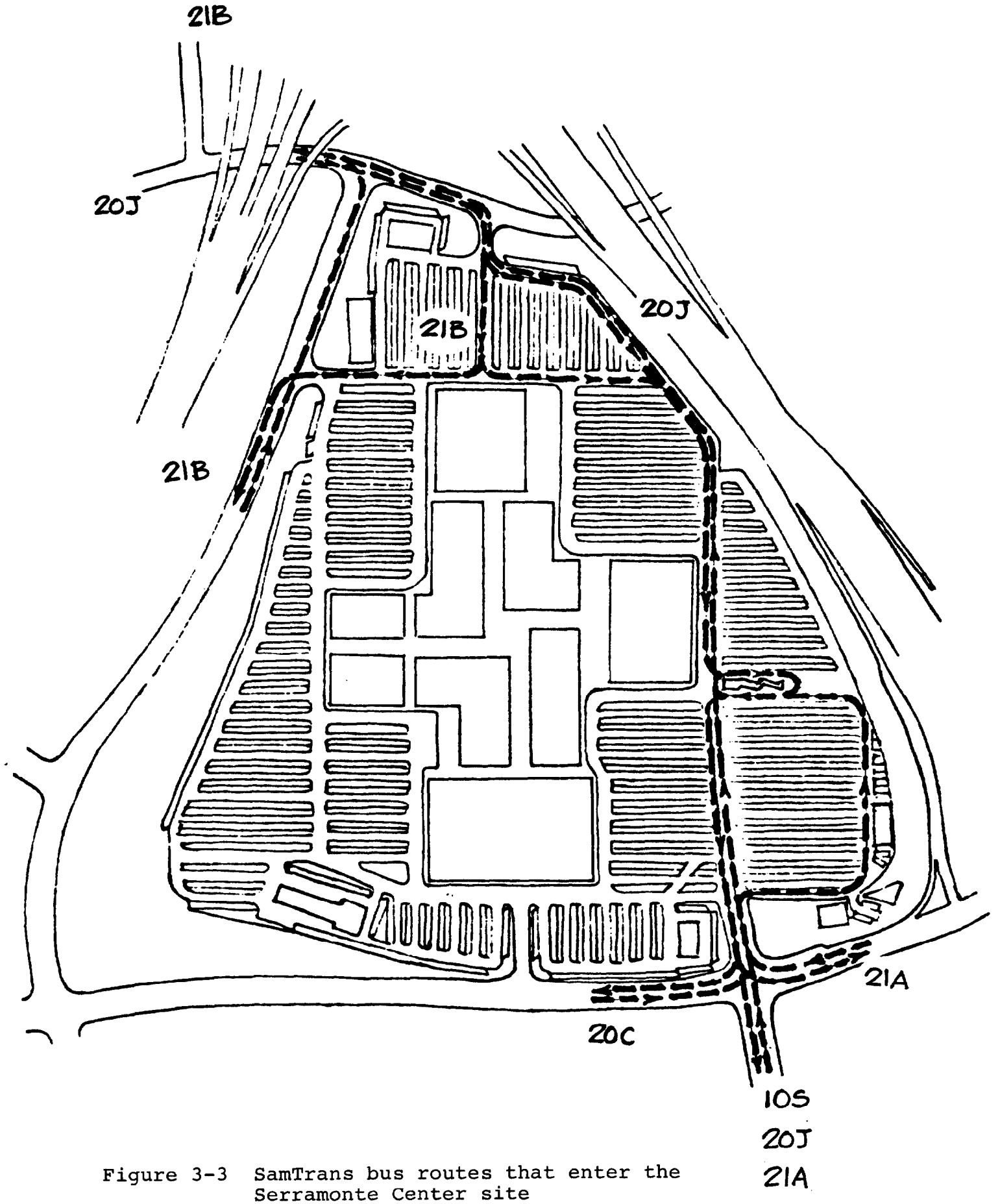


Figure 3-3 SamTrans bus routes that enter the Serramonte Center site

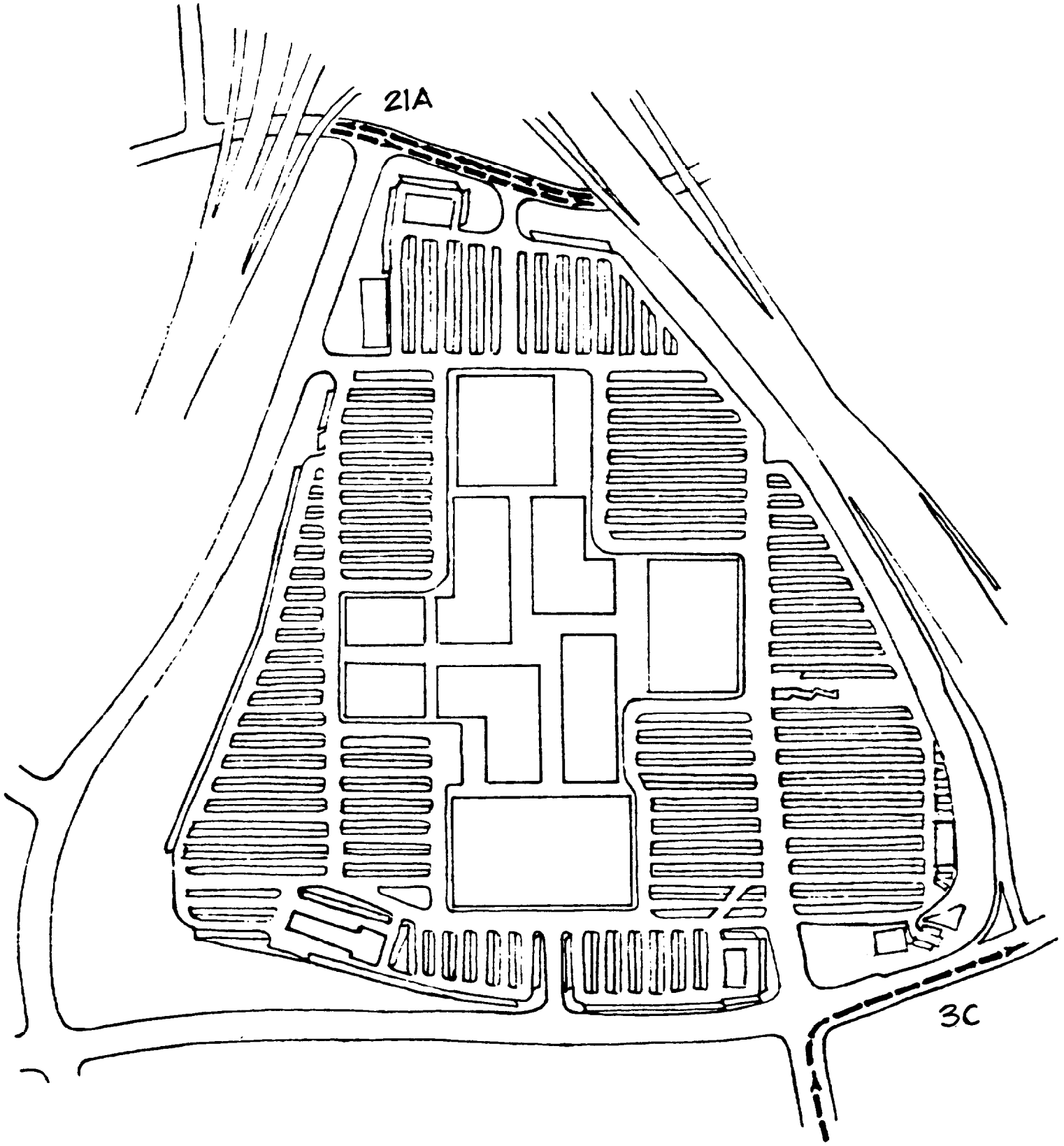


Figure 3-4 SamTrans bus routes that pass Serramonte Center but do not enter the site

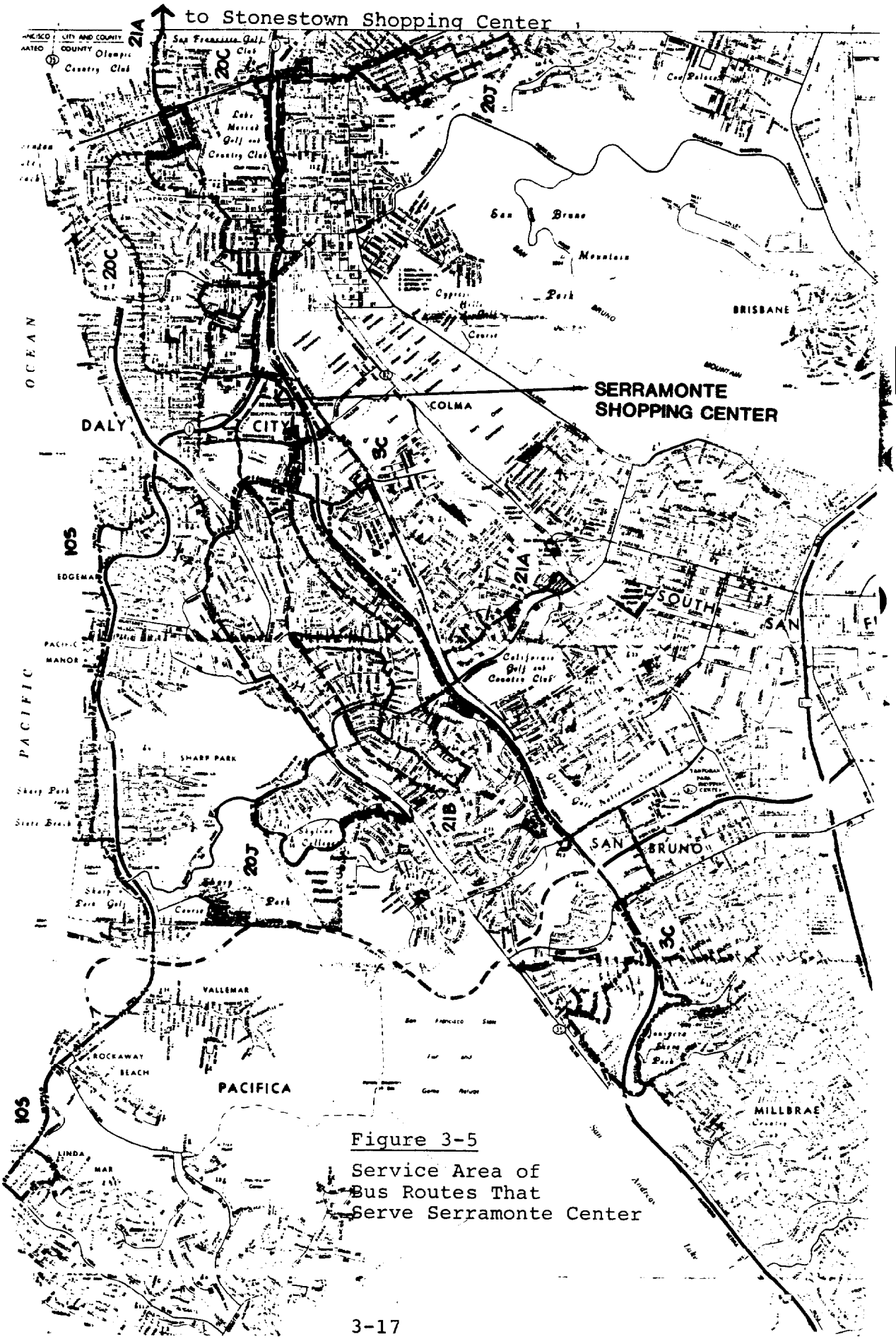


Figure 3-5

Service Area of
Bus Routes That
Serve Serramonte Center

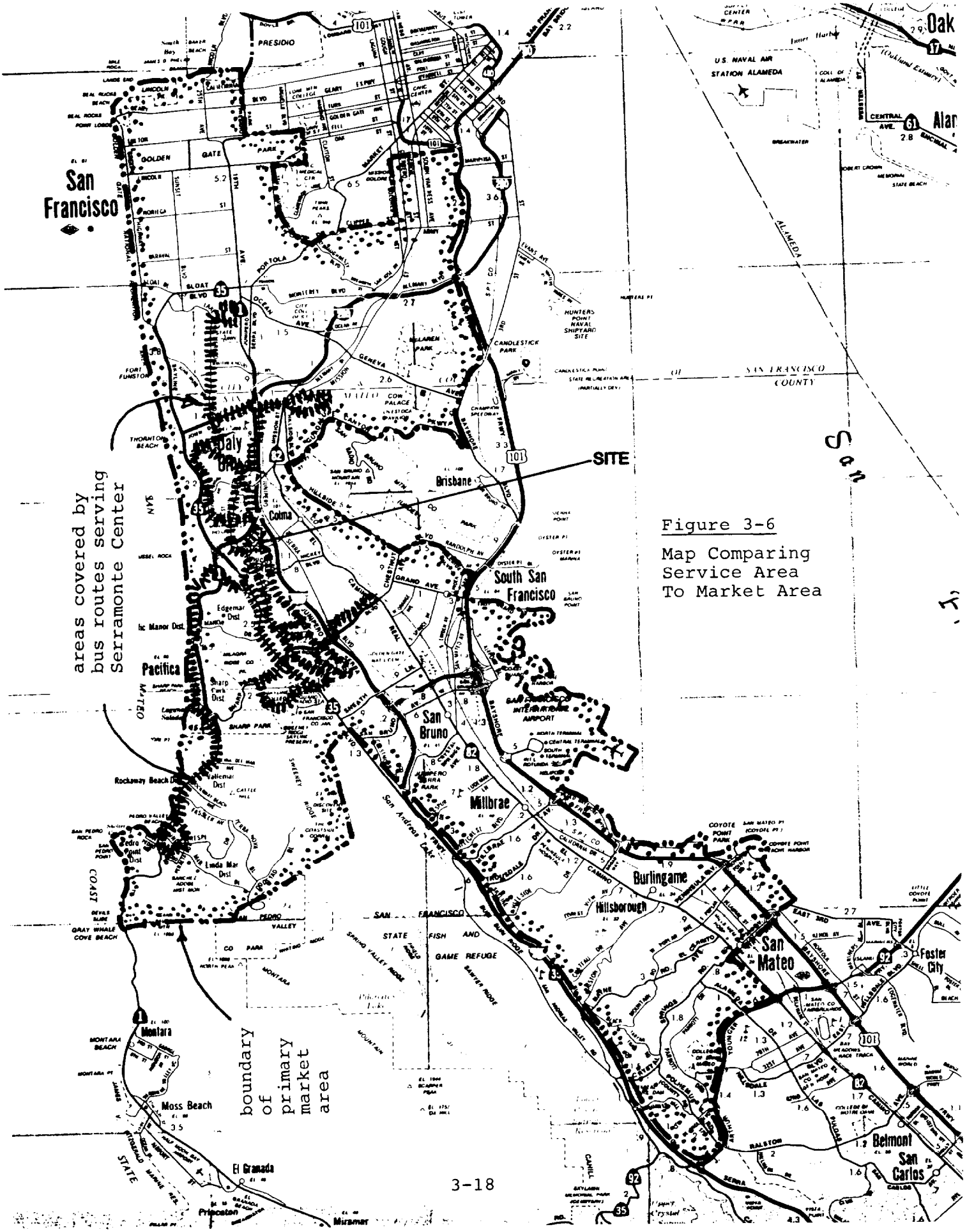


Figure 3-6

Map Comparing Service Area To Market Area

D. Characteristics of Current Transit Riders

In December 1980 and January 1981, a survey of pedestrians on the Serramonte Center mall was conducted for the management of the Center. The survey results, based on completed interviews with 1,552 respondents, offer a description of people found on the mall and the characteristics of those likely to be SamTrans riders.

Overall, the survey indicated that about 6.6 percent of the people on the mall had ridden SamTrans to the Center on the day of the interview. SamTrans was the second most predominant form of transportation to Serramonte, after private automobile, as shown in Table 3-5.

Some groups of respondents had a greater proportion of SamTrans riders than the overall average of 6.6 percent. Table 3-6 shows the

TABLE 3-5

Mode of Transportation to Serramonte Center

Mode	Number	Percent
Automobile	1,401	90.3
SamTrans	103	6.6
Walking	22	1.4
BART	6	0.4
Taxi	4	0.3
Other	16	1.0
TOTAL	1,552	100.0

Source: Gruen Gruen + Associates

TABLE 3-6

Residential Location Characteristics of SamTrans Riders at Serramonte Center

City	Percent of City Residents Interviewed at Serramonte Who Use SamTrans
Daly City	11.2
Pacifica	7.5
San Bruno	0.0
South San Francisco	9.4
Other Peninsula Cities	1.8
Other	5.3

Source: Gruen Gruen + Associates

percentage of people from each nearby city who rode SamTrans to Serramonte. It indicates that people from Daly City, South San Francisco and Pacifica are more likely than the average to ride SamTrans, because more than 6.6 percent of the people surveyed from each of those cities had traveled to Serramonte by bus. In Table 3-7 the percentage of all Serramonte SamTrans riders from each city is compared to the overall number of respondents from each city. Those figures show that greater proportions of all SamTrans riders than of all shoppers came from Daly City, South San Francisco and Pacifica. One conclusion that may be drawn from Tables 3-6 and 3-7 is that people who live in areas well served by transit are most likely to use the transit system for shopping trips.

The income characteristics of Serramonte SamTrans riders are examined in Tables 3-8 and 3-9, Table 3-8 shows that people who live in households that had incomes of less than $15,000 were more likely than the average respondent to ride

TABLE 3-7

Comparison of Residential Locations:
SamTrans Riders vs. All Respondents

Place of Residence	Percent of All Respondents	Percent of SamTrans Riders
Daly City	25.7	40.8
Pacifica	9.7	10.7
San Bruno	2.8	0.0
South San Francisco	6.9	9.7
Other Peninsula Cities	7.4	1.9
San Francisco	42.9	36.0
Other	4.6	0.9
TOTAL	100.0	100.0

Source: Gruen Gruen + Associates

TABLE 3-8

Income Characteristics of SamTrans Riders at Serramonte Center

Income Group	Percent of Group Who Rode SamTrans
Under $15,000	11.3
$15,000 - $24,999	5.7
$25,000 - $49,999	3.6
$50,000 or more	4.4

Source: Gruen Gruen + Associates

TABLE 3-9

Comparison of Income Characteristics: SamTrans Riders vs. All Respondents

Income Group	Percent of All Respondents	Percent of SamTrans Riders
Under $15,000	26.0	46.1
$15,000 - $24,999	29.8	27.0
$25,000 - $49,999	32.9	19.1
$50,000 or more	11.4	7.9
TOTAL	100.0	100.0

Source: Gruen Gruen + Associates

SamTrans to the center but that people in all other income groups were less likely than average. (Average is the overall average of 6.6 percent.) Table 3-9 shows that 46.1 percent of SamTrans riders surveyed but only 26.0 percent of all respondents had household incomes of less than $15,000. Thus, income is definitely a factor that influences people to ride transit to the center.

Tables 3-10 and 3-11 describe the age group characteristics of survey respondents. It should be noted, however, that interviews were conducted only with people at least 16 years old. Given this limitation, Table 3-10 shows that people 61 years of age or older were more likely than average to ride SamTrans to Serramonte. Table 3-11 shows that people in that age group comprised 11.2 percent of all respondents but 23.5 percent of respondents who rode SamTrans. The "over 60" age group is generally considered to be one of the primary transit-using groups, and Serramonte survey respondents appear to be no exception.

TABLE 3-10

Age Characteristics of SamTrans Riders at Serramonte

Age Group*	Percent of Group Who Rode SamTrans
16 - 60	6.0
61 or older	12.6

*Interviews were conducted only with people 16 years or older.

Source: Gruen Gruen + Associates

TABLE 3-11

Comparison of Age Characteristics: SamTrans Riders vs. All Respondents

Age Group*	Percent of All Respondents	Percent of SamTrans Riders
16 - 60	88.8	76.5
61 or older	11.2	23.5
TOTAL	100.0	100.0

*Interviews were conducted only with people 16 years or older.

Source: Gruen Gruen + Associates

One final characteristic of survey respondents - whether or not they work at Serramonte Center - is explored in Tables 3-12 and 3-13. Table 3-12 reveals that 16.5 percent of center employees ride SamTrans, about 2.5 times the overall average of 6.6 percent. Table 3-13 shows that center jobholders comprised 7.4 percent of all survey respondents but 16.5 percent of SamTrans riders interviewed.

This last finding - that center workers are significantly more likely than shoppers to use transit - is an important one for both SamTrans and the shopping center. For SamTrans, it indicates that efforts to increase ridership on its routes to the center are likely to be most effective if they are concentrated on routes and times that serve center employees. For Serramonte, it means that workers who do commute via transit are leaving valuable parking spaces free for shoppers.

Because this information is valuable to both the (public) transit agency and (private) center

TABLE 3-12

Work Characteristics of SamTrans Riders at Serramonte

	Percent of Group That Rode SamTrans
Work at Serramonte	16.5
Do Not Work at Serramonte	6.1

Source: Gruen Gruen + Associates

TABLE 3-13

Comparison of Work Characteristics: SamTrans Riders vs. All Respondents

	Percent of All Respondents	Percent of SamTrans Riders
Work at Serramonte	7.4	16.5
Do Not Work at Serramonte	92.6	83.5
TOTAL	100.0	100.0

Source: Gruen Gruen + Associates

management, it was decided to examine the characteristics of Serramonte workers more closely. The number of workers interviewed during the 1980-81 survey, however, was too small to allow meaningful analysis. Therefore, as part of this study, a new survey - specifically of workers at Serramonte Center - was undertaken. The results of this new survey are summarized in Section 5 of this report.

E. Plan of Future Parking and Circulation Improvements

As part of its initial planning work to prepare for a large expansion project, the Center began a study of the shopping center's parking and circulation system to determine what limitations the traffic capacity of the access system would place on the proposed expansion. The study also looked for ways to improve the internal circulation system and overcome some of the existing circulation problems.

During development of the expansion plans, a number of possible parking and access arrangements were studied, including multi-level parking structures in various locations on the site. Circulation road improvements on the ground level were also studied.

When the larger expansion plans were delayed, planning work was redirected and concentrated on improvements of less magnitude, including shorter term improvements within the existing building lines. Studies of the parking and circulation system were carried further to establish a reasonable maximum number of parking spaces that could be provided at ground level while incorporating as many of the significant circulation improvements as possible.

Plans for the proposed road and parking changes were drawn, and reviewed with major tenants. The plan then underwent a series of modifications to suit the requirements of the tenants and satisfy the conditions of their leases. The resulting Parking and Circulation Improvement (PCI) Plan has been approved by the major tenants and is to be implemented when short-term expansion projects require, or when existing road and parking areas require major maintenance or repair.

The proposed PCI Plan is illustrated in Figure 3-7. It directs the main circulation road (which enters from Gellert Boulevard) to the easterly perimeter of the site. It also includes a number of intersection improvements and revises portions of the existing parking layout. The PCI plan provides about 4,900 parking spaces, including some small-car spaces.

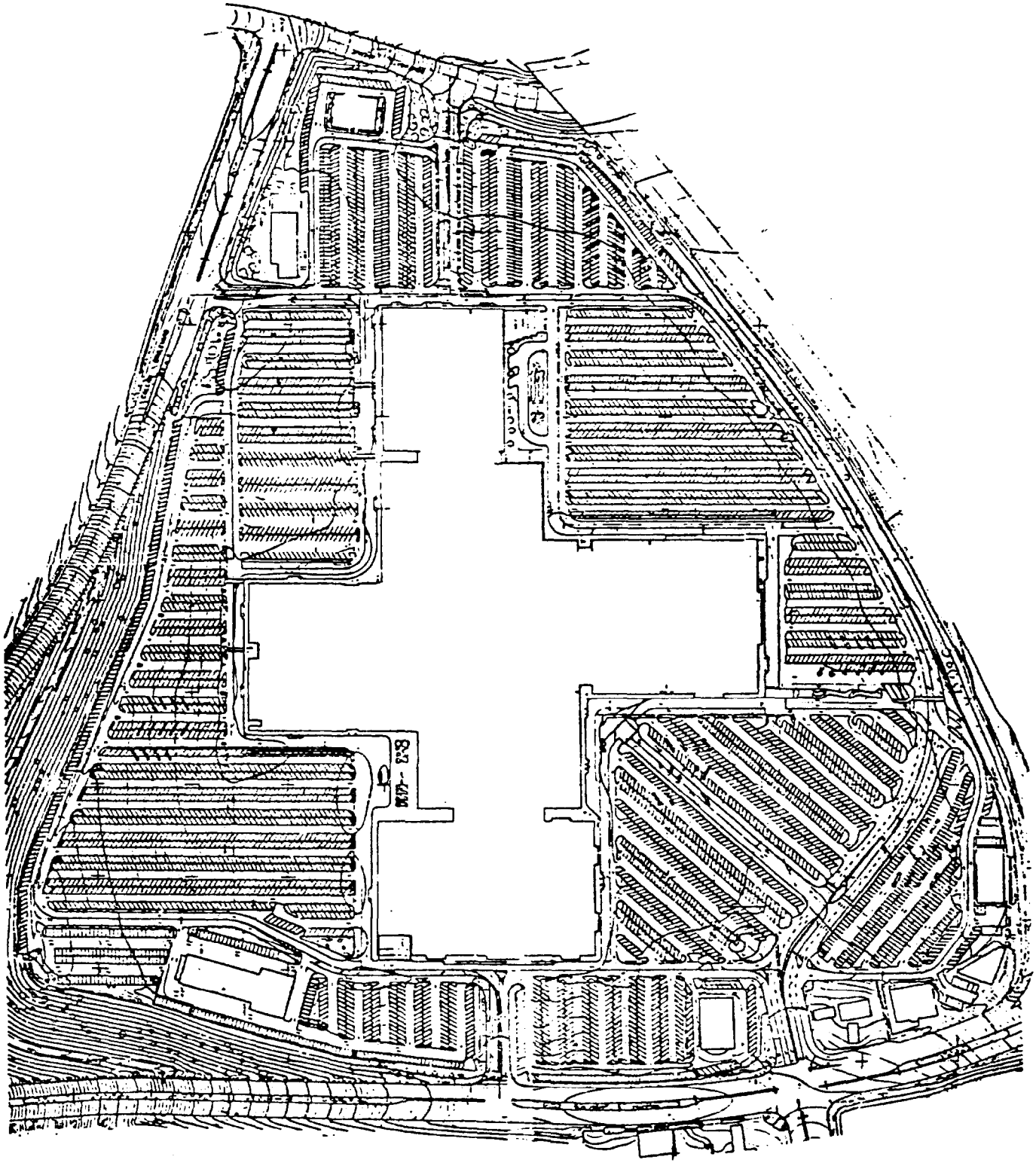


Figure 3-7 Parking and Circulation Improvement Plan

4.PLANNING AND JOINT DEVELOPMENT ISSUES

Interviews were conducted with SAMTRANS staff and Serramonte management to identify major issues related to planning the new transit center facility. Issues areas discussed included the following:

- Planning process
- Communications
- Service criteria
- Economics
- Operations
- The role of transit in bringing shoppers and workers to Serramonte
- Cooperation/joint development
- Station criteria
- Park-ride
- Lessons for other centers

The issues that were identified during these interviews are described on the following pages.

1. Planning Process

The process for planning and providing bus service to a new shopping center in San Mateo County does not appear to be an established one. Most often, the desire of a center for any bus service results directly from the requirements imposed during the environmental impact report approval process, and a center consequently pursues the acquisition of service only reluctantly and often at the last minute. At SAMTRANS, there appears to be little consistent philosophy or established policy about the desirability of taking public buses onto private property

in general, or about the optimal arrangement for providing service to shopping centers in particular. Similarly, there is no key individual staff member at SAMTRANS who has been identified to handle requests for planning and coordination of transit service to shopping centers.

Planning for the provision of transit services to shopping centers should recognize that, while SAMTRANS planning is guided by the need to meet revenue objectives, Serramonte planning is guided by the legal agreement it has with its major tenants (parking stipulations and leases, etc.). These leasing arrangements often put shopping center developers in untenable positions when they are required to renegotiate these leases in order to provide for transit service.

Planning must also be done in close coordination with local planning agencies. Recent discussions with Daly City staff indicates the following issues relevant to this study:

1. Some concern about the traffic impacts of an additional stop sign or traffic light along Serramonte Boulevard between the Ward's exit and Gellert Boulevard.

2. Costs for the traffic improvements (e.g. modifications to the median, signals, restriping, etc.) must be borne by the developer.

3. There are no current development plans in the area that would relate to this study. However, the Serramonte H.S. site might be developed someday and create additional traffic on Serramonte Boulevard.

2. Communications

There appears to be a significant need for improved communication and education of the potential mutual benefits of providing transit to shopping centers. The potential to reduce required parking spaces, and thereby increase Gross Leasable area at shopping centers through the use of bus transit needs to be demonstrated to shopping center owners. Related communication/education issues include transit planning to reduce local and on-site traffic congestion, potential benefits from park-ride, and other transit related parking solutions, and the importance of transit service to the shopping center's shoppers and employees.

There is also a need for transit agencies and shopping center management to communicate regularly regarding transit problems and issues, changes in service, special shopping center events, new routings and schedules, security and related issues.

3. Service Criteria

Interviews and discussions concerning service criteria included questions concerning the methods used in choosing new routes, responsibility for arranging service to shopping centers, and the provision of service to areas that are transit dependent. Also included were issues related to the establishment of new transit market in the service area. Discussion of expanding markets included the potential for a transit link to the proposed new BART station to be located somewhat nearer Serramonte Center. These discussions also included the potentials for capturing more of the choice transit market (those who own and drive automobiles).

There appears to be some difference on objectives related to the provision of transit service with SAMTRANS staff seeming to emphasize service to transit dependent populations, while Serramonte leans toward the provision of service to the general population. SAMTRANS has indicated that any new service to Serramonte would have to be removed from other portions of the SAMTRANS service area.

A large percentage of ethnic families live in the Daly City area. Many of these people shop at Serramonte and a number use SAMTRANS for this purpose. The reason for transit use includes the lack of a primary or secondary auto, the inability to drive due to income, cultural background, age or disability. Serramonte welcomes SAMTRANS service as it brings shoppers to the center. This is in contrast to some other shopping centers in the SAMTRANS service area who apparently feel that transit service brings "undesirable"

people to their centers (from a socioeconomic point of view).

4. Economics

Economic issues that were discussed included concerns by Serramonte management about the costs ($25,000 to $35,000 per year) to repair on-site roads that are damaged by the impact of SAMTRANS buses. Other issues included using fare box revenues to justify service, the potential to increase shoppers by adding bus routes, and the need for subsidies for special or new transit service. Serramonte management pointed out that shopping center developers need to know what benefits they can expect from transit improvements in terms of retail sales, additional floor space, less parking, etc. Costs of transit service to Serramonte Center in terms of pavement repairs, maintenance and policing, were also discussed.

5. Operations

Providing transit service on private property was one of the issues discussed on this subject, including problems of traffic congestion, the location of bus stops in relation to headways, the requirement for layover space, and potential traffic safety problems. SAMTRANS routing through Serramonte Center was described with many routes linking Serramonte with the Daly City BART station. The fact that there are no trunk routes into Serramonte was discussed in terms of the overall SAMTRANS service system. The BART to Serramonte Christmas shuttle, subsidized by Serramonte was discussed in terms of potential for the future and subsidy requirements.

In terms of routing, approximately six different routes

serve Serramonte Center, with many going on to the BART station and other nearby destinations. Capacity problems currently exist only at the PM peak at the Daly City BART station. SAMTRANS staff indicated that new routing and bus stops at Serramonte Center might be acceptable if they maintained and/or improved existing bus headways. It was pointed out that two-way traffic for buses was important in terms of maintaining headways and for passenger orientation. One route to Serramonte (21B) does not bring passengers to the existing bus shelter. Instead, it stops at Macys due to routing and headway problems. Passengers wishing to transfer must find their way between the stop a Macys and the bus shelter near Mervyn's.

6. The Role of Transit in Bringing Shoppers and Workers to Serramonte

During the interviews and workshops, it was clear that additional data was needed related to the number of people who come to Serramonte by transit, and how many of these are shoppers and employees. Data is also needed on the number of people transferring at Serramonte. There seemed to be general agreement that Serramonte sales are, to some degree, related to a transit dependent population. Therefore, more information is needed on the age, income, and availability of autos of those currently shopping and working at Serramonte Center. It is currently perceived that bus riders to Serramonte are primarily children, the elderly, and transit dependent. It was pointed out that Daly City is fairly homogenious socially with many transit dependent areas. By design, SAMTRANS serves more transit dependent areas - providing service to Serramonte Center. This pattern seems to be very different from other areas of San Mateo County (e.g. the market areas of the Hillsdale and Sanford Shopping Centers).

7. Cooperation/Joint Development

The existing bus shelter at Serramonte Center was built and paid for by the shopping center owner. The use of this bus shelter has raised issues concerning liability, pavement damage cost, use of parking areas for bus layovers, costs and responsibility for security and maintenance, etc. Directly related are joint development issues such as on-site routing, location of bus stops and related operational issues of joint concern. Potential benefits of joint development for a future transit center at Serramonte were also discussed.

A second major joint development issue that was discussed was the potential for using Serramonte Center parking areas as park-ride facilities for transit patrons, who would use a shuttle bus between Serramonte Center and the nearby BART station. It was felt that these transit users might provide more sales for Serramonte Center. SAMTRANS would like to use a portion of the Serramonte parking area for these park-ride facilities. However, Serramonte management is not a favor of this use due to management, security, maintenance and related problems, In addition, they do not know how to avoid the use of their parking facilities by neighboring owners and tenants. One of the major problems discussed in relation to park-ride is that the Center needs every parking space it has in November and December - and, to a slightly lesser degree, in the Easter and back-to-school seasons. Serramonte has permitted the use of its parking areas for special SAMTRANS events (e.g. to pick up passengers for special football games at Candlestick Park, etc.) on a case by case basis.

Discussions also included the potentials for joint development and planning benefits that exist in the careful analysis of the manner in which shopping center parking is handled. For example, if less parking spaces are required due to heavier transit use, additional Gross Leasable Area (GLA)

could be developed on a particular site. Park-ride facilities might provide the center with more shoppers by making them familiar with transit in their daily commute. Off-site employee parking might free up more on-site parking spaces for customers during peak holiday shopping seasons. Potentials may exist for attracting more shopping center employees to use transit. Each employee on transit frees a parking space that could be used by a customer. These spaces are used many times over by customers during the day. The potentials for providing incentives for employees to use transit during peak shopping seasons to free up parking spaces was also discussed.

Related to the above, cooperative marketing efforts, such as joint advertising, could benefit both the shopping center and the transit district in increasing ridership and bringing more shoppers.

8. Station Criteria

Interviews and discussions on patient criteria indicated to main categories (1) shopper/passenger convenience, and (2) bus transit operational efficiencies.

Passenger/shopper convenience included: weather protection, air circulation, heating on cold days, amenities (both functional and visual), safety and security, views of oncoming buses, wheelchair access, information systems (routes and neighborhood maps), natural and artificial lighting and seating.

Transit operational efficiencies include consideration of layover space, turning radii (including the new long articulated buses), loading base, headways, routing and on-site traffic congestion.

SAMTRANS experience has indicated that two-way traffic for buses in important in terms of maintaining headways and for passenger orientation. Serramonte shoppers seem to know the location of the existing bus shelter quite well and it is an important orientation feature of the shopping center for those shoppers who come by transit. Convenient access must be provided for shoppers between the bus shelter and the shopping center stores in terms of distance and weather protection. In addition, the link between the bus shelter and the stores should be attractive and lively (e.g. displays, commercial facilities, exhibits, kiosks, etc.). One of the major design problems is how to link the transit service with the shopping mall.

Experience at Serramonte has shown that when the original bus stop was adjacent to the Mervyn's store, congestion and vandalism occurred which had impact on Mervyn's. Subsequent moving of the bus shelter from Mervyn's to its present location did not impact ridership. However, changes in bus routing and frequency of service have had their effect on bus ridership.

Other issues that were discussed included: that a close-in location for a bus stop at the "heart" of shopping activities was best for sales and customer convenience, but produced many traffic congestion problems for SAMTRANS and the Center. It was pointed out that the location of bus stops is often a negotiated issue and is not often logically planned. Using a shopping center at a place for laying buses over has value in terms of providing driver "breaks" (e.g. coffee, shops, restrooms, etc.).

9. Park-Ride

Issues related to park-ride have been discussed under

Joint Development above. SAMTRANS remains interested in using Serramonte's parking areas for park-ride purposes, while the Serramonte management opposes this use due to management and security problems. Serramonte has indicated a willingness to consider the use of its parking areas for SAMTRANS activities in relation to special events (e.g. football games, etc.) on a case by case basis. Serramonte management feels it needs to retain control over its parking areas, and that this control would be difficult with a full-time park-ride facility.

10. Lessons for Other Centers

General transferrable conclusions obtained from the interviews and meetings indicated that, in general, developers don't request bus service during the initial planning stages, but do so only when required by the environmental impact reporting process and/or local city requirements. Other comments included that there are currently differing levels of service/rider convenience at each of the six shopping centers in the county, and that this may reflect the differing attitudes towards transit by the various shopping center managers.

It was pointed out that the prior professional experience of transit staff and shopping center managers leads to ingrained patterns of operations and perceptions related to transit benefits (e.g. park-ride, transit service on private property, close-in access, loss of parking spaces for transit, etc.).

JOINT WORKSHOP

Following the interviews described above, a joint workshop was held with SAMTRANS staff, Serramonte management and the study team. The purpose of this workshop was to discuss the issues that were identified during the interviews, to further define SAMTRANS and Serramonte operations and to identify the major areas to be examined in this study.

This workshop produced the following information:

1. Planning Process: SAMTRANS planning is revenue driven (fare box revenues, taxes, etc.) while Serramonte planning appears to be driven by parking requirements that are stipulated in their leases with tenants, and other legal documents.

2. Communications: Improved communications are needed between SAMTRANS and Serramonte in terms of descriptions of the logic to support data provided by each.

3. Service Criteria: How can "choice" markets be

attracted to transit? This seemed to be a difficult problem. During the discussion, it appeared that perhaps employees at Serramonte were the best potential for attracting new riders to SAMTRANS. Questions arose as to whether transit dependent people used SAMTRANS to go to Serramonte on Sundays. Questions arose concerning the provision of additional SAMTRANS service during employee arrival and departure hours and whether subsidies would be required for this service. It was suggestion that, perhaps a feasibility study would be required to evaluate the connection between Serramonte and the new BART station in terms of revenues, costs, patronage and service.

4. Economics: Concerns were raised that the above-described connection to the new BART station could mean a loss of revenue for SAMTRANS.

5. Operations: During the discussion, it was pointed out that SAMTRANS buses sometimes get caught in peak hour congestion at Serramonte Center (Christmas, holiday shopping, etc.). Operational issues at shopping centers include: bus turning radii, headways, routing and bus lay-overs.

Ridership

6. Data: Information is needed on the availability of autos to Serramonte shoppers and employees. Profiles are needed of Serramonte shoppers, employees and SAMTRANS riders. Additional data is also needed on the number of SAMTRANS riders who disembark at Serramonte at differing times of the day.

7. Cooperation/Joint Development: Joint development/ cooperation issues discussed included security, maintenance costs, joint liability, legal aspects, and financing. Discussion of financing included the potential of adding other funding sources (e.g. CALTRANS, etc.). Discussion focused on park-ride cooperation and on bus stop locations, on-site routing, etc. The benefits of cooperation and joint development were described in terms of the fact that more SAMTRANS riders would require less parking at Serramonte Center. The potential of having more employees using SAMTRANS services was discussed and it was pointed out that each Serramonte employee who uses a bus frees a parking space (multiplied by the "turnover" factor), and that employees should be encouraged to use the existing transit service (incentives, discount coupons, etc.).

8. Station Criteria: Station criteria issues that were discussed during the workshop included bus movements during Serramonte's congestion period (peak), headways, turning criteria, and the convenience of passengers in reaching their desired destination at Serramonte Center. It was pointed out that station location and design was related to the leases that have been written with major Serramonte tenants in terms of the number of parking spaces that are committed to each major tenant.

9. Park-Ride: No new information was developed on park-ride issues during the workshop.

10. Riders/Shoppers: Future transit ridership to Serramonte is expected to increase. Approximately 6% of Serramonte shoppers currently come by bus, while 17% of the Serramonte employees use SAMTRANS service. Suggestions for incentives to increase the use of SAMTRANS service by employees, especially during congestion periods, included a Christmas pass for employees that would allow free use of SAMTRANS, and thereby free some parking spaces for use by Serramonte shoppers.

11. Lessons for Other Centers: The provision of adequate paving for transit vehicles, and repair of existing paving, was identified as a major issue in terms of planning the location of bus stops and transit routes and in negotiating the time and cost involved. The need for additional information from other shopping centers was also discussed.

WORKSHOP CONCLUSIONS

It was the conclusion of the group that participated in the workshop that the primary focus of the study should be on the issues of:

1. Better data on employee transit ridership.
2. Criteria for station location and design.
3. Potentials for cooperation and joint development.

It was agreed that suggestions for improvements to the Planning Process and Lessons for Other Centers would be included as products of the study, and that Operational Plans would not be a part of this study but would be prepared by SAMTRANS and Serramonte respectively.

5. EMPLOYEE SURVEY

EMPLOYEE SURVEY SUMMARY

In December 1980 and January 1981, Gruen Gruen + Associates (GG+A) conducted a marketing study for the Serramonte Shopping Center. One of the survey results was that workers at the Center were more than twice as likely to ride the bus to and from the Center than were shoppers. About six percent of the former and 16.5 percent of the latter indicated they routinely took the bus to Serramonte.

Because the worker data in this 1980-81 survey were based on a total of only 61 responses, it was decided that a resurveying of all workers at the Serramonte Center would be desirable. While 16.5 percent of workers who commute to work by bus is far from a majority of all workers, it is nonetheless significant in terms of the number of parking spaces that are freed up for shopper use--particularly when viewed in terms of the number of short-term shoppers that could park in spaces now occupied by the longer term employee parkers. The greater proclivity of the workers to ride the bus suggests that additional knowledge concerning the workers' ridership patterns might successfully be used to encourage increased transit ridership among those persons employed at Serramonte. SAMTRANS served as the sponsor for this study. The Serramonte Shopping Center contributed staff time.

Thirty-nine percent of the respondents reported before tax incomes of under $10,000. Sixteen percent indicated incomes between $10,000-$15,000, and 19 percent between $15,000-$25,000. The remaining 25 percent had household incomes above $25,000 in 1981. It is likely that a larger proportion of the under $10,000 households are one-person households or households of unrelated adults, given the age breakdown of the worker sample.

Approximately 37 percent of the sample resided in Daly City, 23 percent in San Francisco, 11 percent each in South San Francisco and Pacifica, 3 percent in San Bruno, and 2 percent each in Millbrae and Burlingame. The remaining 12 percent resided in scattered locations throughout the bay area. One half of the workers had been employed at Serramonte 13 months or less. An additional 20 percent had worked at the Center from between 14 months and 30 months. Seventeen percent indicated they had worked at Serramonte from 3 to 5 years, while only 13 percent of the worker respondents were employed at Serramonte for over 5 years.

Forty-six percent indicated they were employed at Serramonte full-time, while 54 percent said that they were employed on a part-time basis. Seventy-eight percent of the respondents indicated they work regular hours, and 22 percent said that their hours were irregular. Ten a.m. was the arrival time and eight p.m. the departure time for half of the sample who indicated that they worked regular hours.

Sixty-nine percent of the worker respondents drive to work by themselves. Approximately 10 percent say they are able to get a ride to work. Sixteen and a half percent ride the bus, and almost 3 percent walk to work. Sixty-eight percent of the sample indicated they had a car available most days, 14 percent some days, and 18 percent, or 48 respondents, no days. Seventy-three percent of all worker respondents who said they do not have use of a car rode the bus to work. Less than one percent of those who said that a car was available most days took the bus to work, while 20 percent who had a car available some days rode the bus to their Serramonte job.

The average (mean) worker travels 20 minutes while half the sample takes less and half more than 15 minutes to get to work. One-fourth of the sample indicated that the availability of public transit influenced their decision to work at the

Serramonte Shopping Center. More than half (51 percent) of the worker respondents who ride the bus to work specified the availability of public transit influenced their workplace decision, while 20 percent of those who routinely used other commute modes indicated that the availability of public transit influenced their work decision.

One hundred and eighty-three, or 68 percent, of the worker respondents sampled specified that they would ride the bus more often to work, provided that a series of service factors were met. "More frequent service" was the factor that appeared to have the potentially greatest positive influence on increased bus ridership. A bus route or stop closer to the respondent's home, cited by 20 percent of the respondents, was the second most influencing factor.

Respondents were asked to estimate the amount of dollars their household spends, on the average, in Serramonte Center for meals eaten at the Center, groceries and other food and beverage items taken away from the Center, and for all non-food items. The average worker respondent routinely spends about $201 per month for all of the above. The maximum monthly expenditures are for non-food expenditures, followed by take-out food and beverage items. The Center's work force would appear, therefore, to serve as a significant captive market making significant contributions to Center sales.

(See Appendix for survey procedures and data.)

6. TRANSIT USER SURVEYS

TRANSIT USER SURVEYS SUMMARY

During the course of this study, SAMTRANS personnel conducted two on-site surveys at Serramonte Center. One survey was a check of passenger activity on buses that stop at the center. The other was a survey of passengers at the existing transit stop.

These surveys indicate that a total of 1,322 people got off the bus at Serramonte and 1,354 people got on the bus during the survey period. The peak periods of ridership appeared to be between 4:01 and 4:30 p.m. (99 people), between 11:31 and 12:00 a.m. (86 people), and between 3:01 and 3:30 p.m. (83 people). The surveys also indicate that between 20 and 21 percent of the passengers on the buses serving Serramonte either got on or off at this destination. These surveys also showed that an average of about 10 people either got on or off each bus at Serramonte. A subsequent survey indicates that the number of bus passengers getting on and off the bus at Serramonte on a Saturday was 58% of the people who rode buses on routes that stop at the center. The peak periods for the passengers getting on and off at Serramonte (78 percent) was between 4:01 and 4:30 p.m. The overall average of passengers getting on and off at Serramonte (23 passengers) on a Saturday was more than double the weekday average of about 10 passengers.

Questionnaires returned by SAMTRANS riders getting or off buses at Serramonte indicated that weekday survey respondents tended to ride the bus during the evening peak hours (between 2:00 and 6:00 p.m.), to stop at Serramonte in order to transfer rather than to shop, and to be between 19 and 40 years old. Further survey information indicates that the primary reason that

weekday respondents came to Serramonte was to buy something (almost 59 percent), and the next most frequent reason was to transfer (almost 29 percent). Almost 13 percent of the respondents worked at the center. Although 186 people said their primary trip purpose was to buy something, 216 said they actually made a purchase while at the center. The majority of those (over 65 percent) spent between $10 and $50; 18 percent spent over $50; while the remaining 17 percent spent less than $10.

Approximately 18 percent of the survey respondents were younger than 18 years old--generally nondriving ages--while almost 63 percent were aged between 19 and 64 years. The remaining 19 percent were older than 64.

Survey respondents who received their questionnaires on Saturday generally came to Serramonte to buy something. The survey shows that almost 79 percent came to the center to make a purchase, almost 14 percent came to transfer, and about 7 percent came to work. As with the weekday respondents, a greater number of riders said they actually made a purchase than said they came intending to make a purchase (in this case, 85 came to buy something and 92 made a purchase). Compared to the weekday respondents, the Saturday shoppers spent more at the center. Further, the Saturday riders' ages were more concentrated in the middle age group (19-64) than the weekday riders, which may indicate that people who work elsewhere during the week ride the bus to shop at Serramonte on the weekend.

(See Appendix for additional survey data and information.)

7. TRANSIT RIDERSHIP TRENDS

Statistics provided by SAMTRANS staff related to ridership trends are indicated on Table 7-1. These statistics are for local routes that serve Serramonte Center. This table also includes data describing ridership trends of the local service portion of the overall SAMTRANS system and shows that service to Serramonte Center is following a similar trend to that of the entire system.

Staff estimates indicate that a ridership growth rate of 2-3% can be anticipated throughout the SAMTRANS system during the next two years, with similar increases in ridership to Serramonte Center. If these estimates materialize, an additional 27,000 to 42,000 total passengers can be expected on these routes annually during this period.

SAMTRANS staff anticipates ridership impacts that will be caused by an extension of BART to Colma, and perhaps, beyond. As furnished by staff, the ridership impact would be as follows. Assuming that most transit users to Serramonte are coming from areas in San Francisco that border the BART route, SAMTRANS can expect a better market capture with BART extended to Colma than with existing buses. Using postal zip codes as a reference, there are three zip code areas along the BART route (94112, 94131, and 94110). Of these, only 94112 is currently in the Serramonte service area. If BART is extended, all three areas will be well served by transit and SAMTRANS can expect the ridership to triple over existing patronage. As there are currently about 100 riders who use transit daily from the 94112 zip code area, we can expect about 300 riders daily if BART is extended. This is based on the provision of a SAMTRANS shuttle linking the BART station with the Serramonte Shopping Center and operating on 15 minute headways. Further,

BART estimates about 6,000 passengers daily (3,000 each way) from a Colma station. If 5 percent are shoppers and employees bound for Serramonte, there will be 300 passengers.

TABLE 7-1: SERRAMONTE SHOPPING CENTER

Trends in Route Ridership Serving the Center

FISCAL YEAR	SAMTRANS ROUTE									
	20C		20J		21A		10S		TOTAL	
	Annual Pass.	% Change	Annual Pass.	% Change	Annual Pass.	% Change	Annual Pass.	% Change	Annual Pass.	% Change
1979-80	1,381,163		669,713		749,021		174,539		2,974,436	
1980-81	1,448,134	+4.8	786,640	+17.5	858,145	+14.6	184,120	+5.5	3,277,039	+10.2
1981-82	1,504,267	+3.9	907,907	+15.4	925,771	+7.9	175,110	-4.9	3,513,055	+7.2
1982-83 YTD*	604,917	-2.8	363,132	-0.8	360,865	-6.2	68,508	-1.7	1,397,422	-3.1

COMPARISON WITH TOTAL SYSTEM

Local Only

Fiscal Year	Local Sys.	
	Annual Pass.	% Change
1979-80	10,756,845	
1980-81	12,073,619	+12.2
1981-82	12,836,929	+6.3
1982-83 YTD*	4,950,831	-3.9

* JULY-NOV. 1982-83

Source: SAMTRANS

8. TRANSIT CENTER LOCATION STUDY

In order to stimulate discussion by the Agency and the Center, and to focus on pertinent issues, the consultants prepared alternative plans of possible bus stop locations. Each plan indicated a general design arrangement of the bus stop, pedestrian access, parking changes, and changes in the routing of bus lines.

The alternative plans were presented first to the Agency and then to the Center, for their review and discussion, and for each group to select its preferred bus stop location. A joint meeting was then held for further discussion on design options for the preferred location and possible methods of implementing the proposed bus facility.

This part of the report describes the alternative bus stop location plans, and summarizes the considerations that led to selection of a preferred location.

Figure 8-1 indicates the nine alternative bus stop locations for which plans and descriptive information were prepared. The locations are designated by letters A through J. A plan for the existing bus stop and each of the nine alternatives is shown in Figures 8-2 through 8-11.

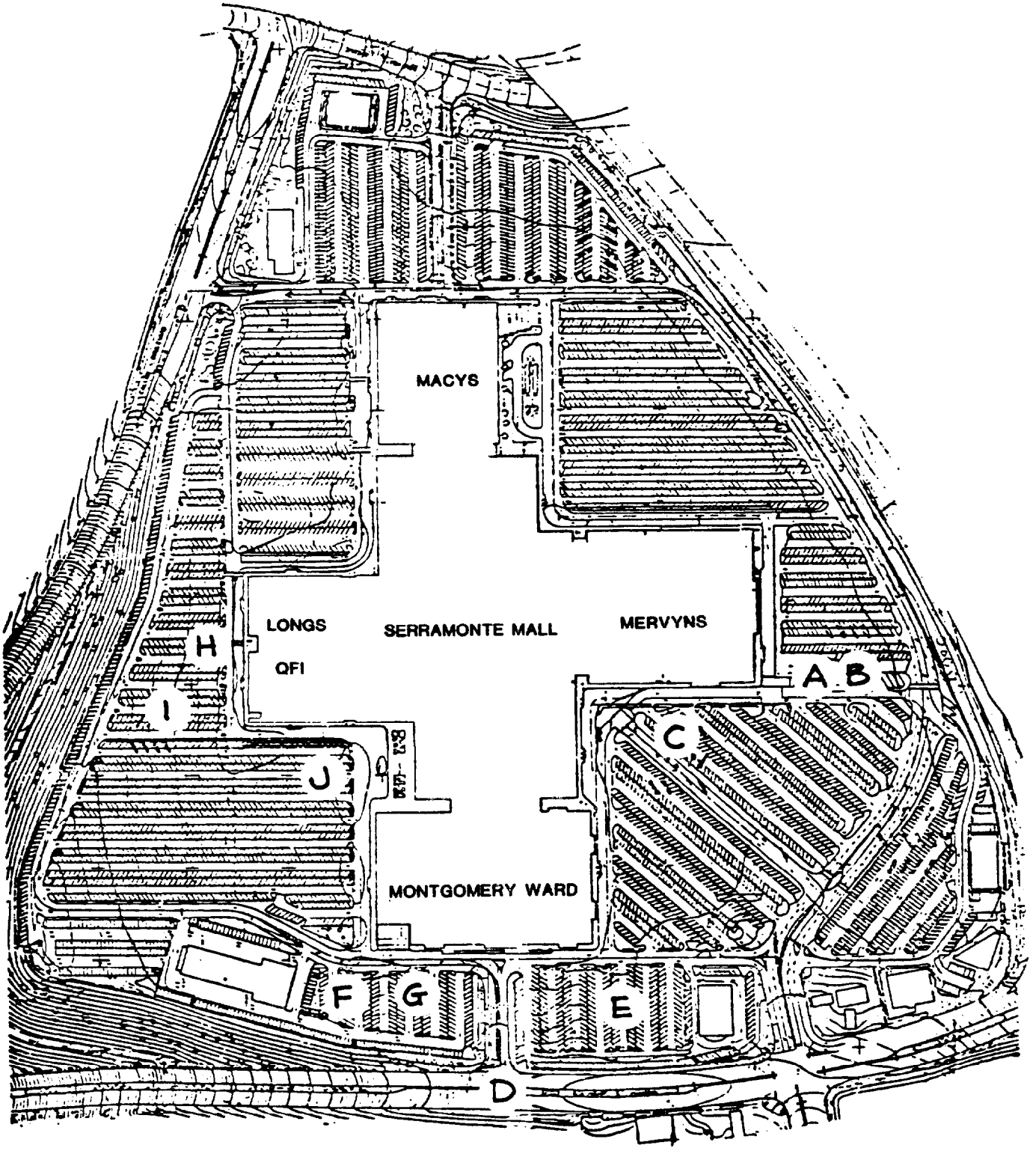


FIGURE 8-1
ALTERNATIVE BUS STOP LOCATIONS

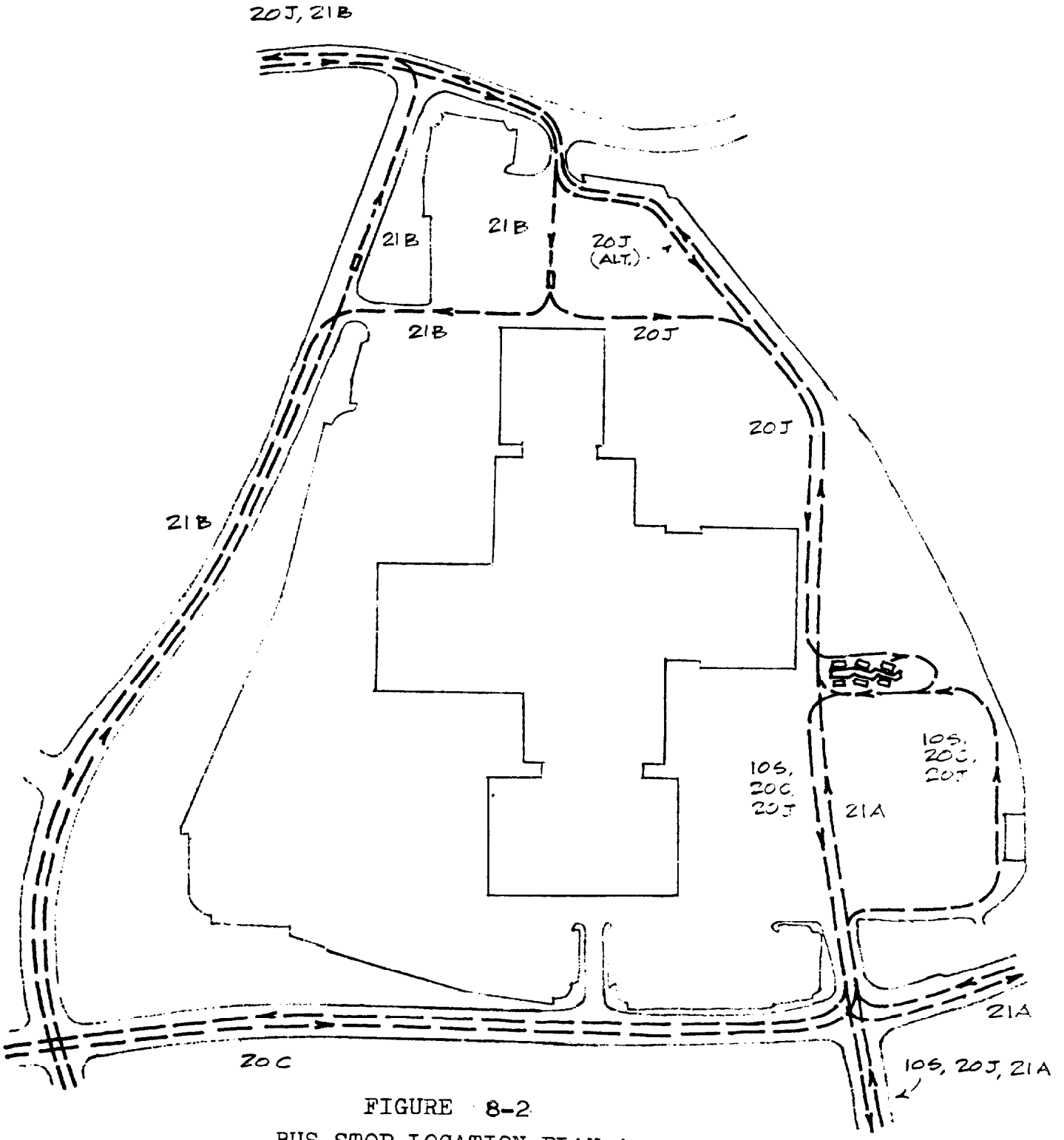


FIGURE 8-2

BUS STOP LOCATION PLAN A
(EXISTING CONDITIONS)
INCLUDING ROUTES OF SAMTRANS BUS LINES

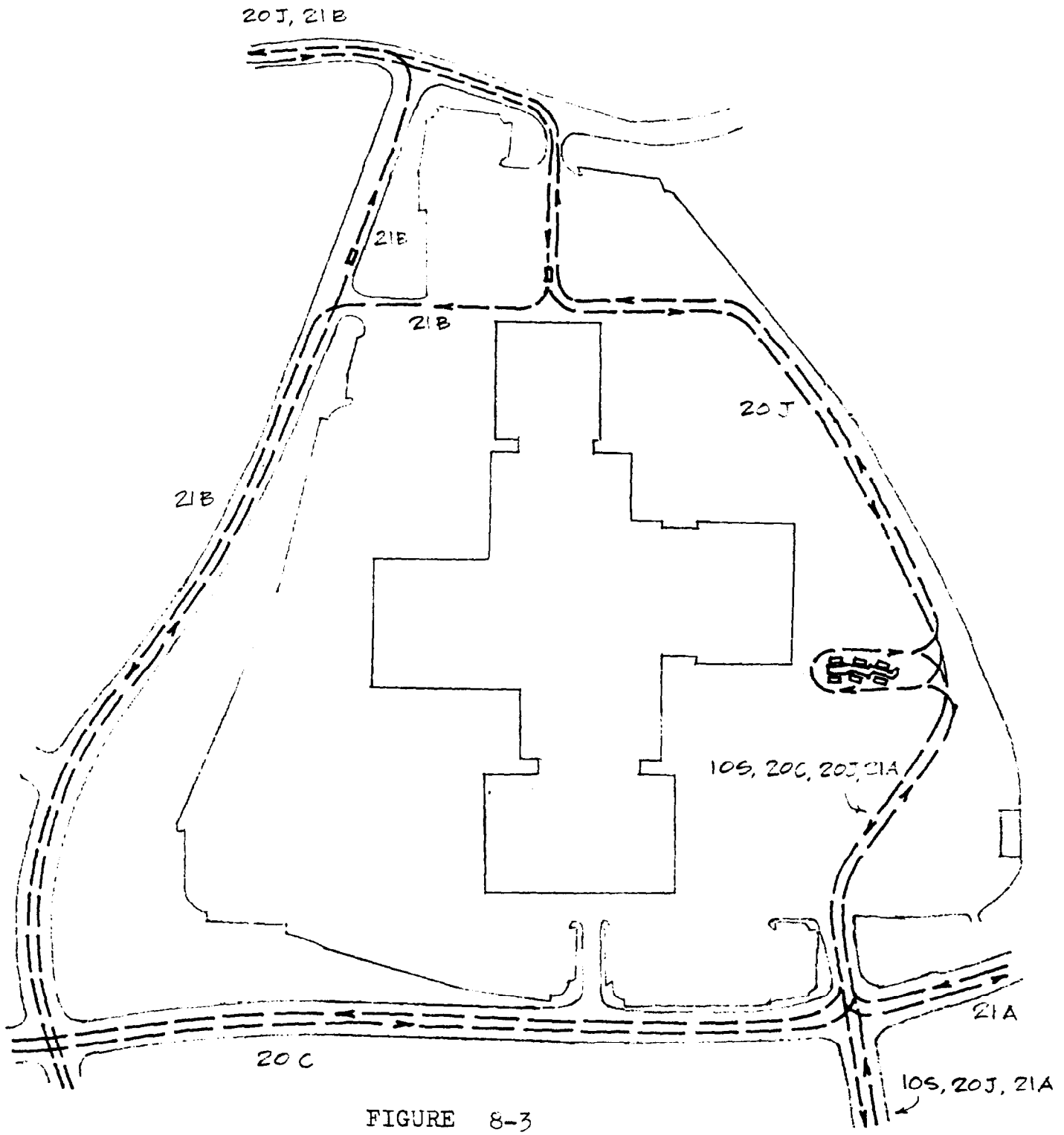


FIGURE 8-3

BUS STOP LOCATION PLAN B
INCLUDING ROUTES OF SAMTRANS BUS LINES

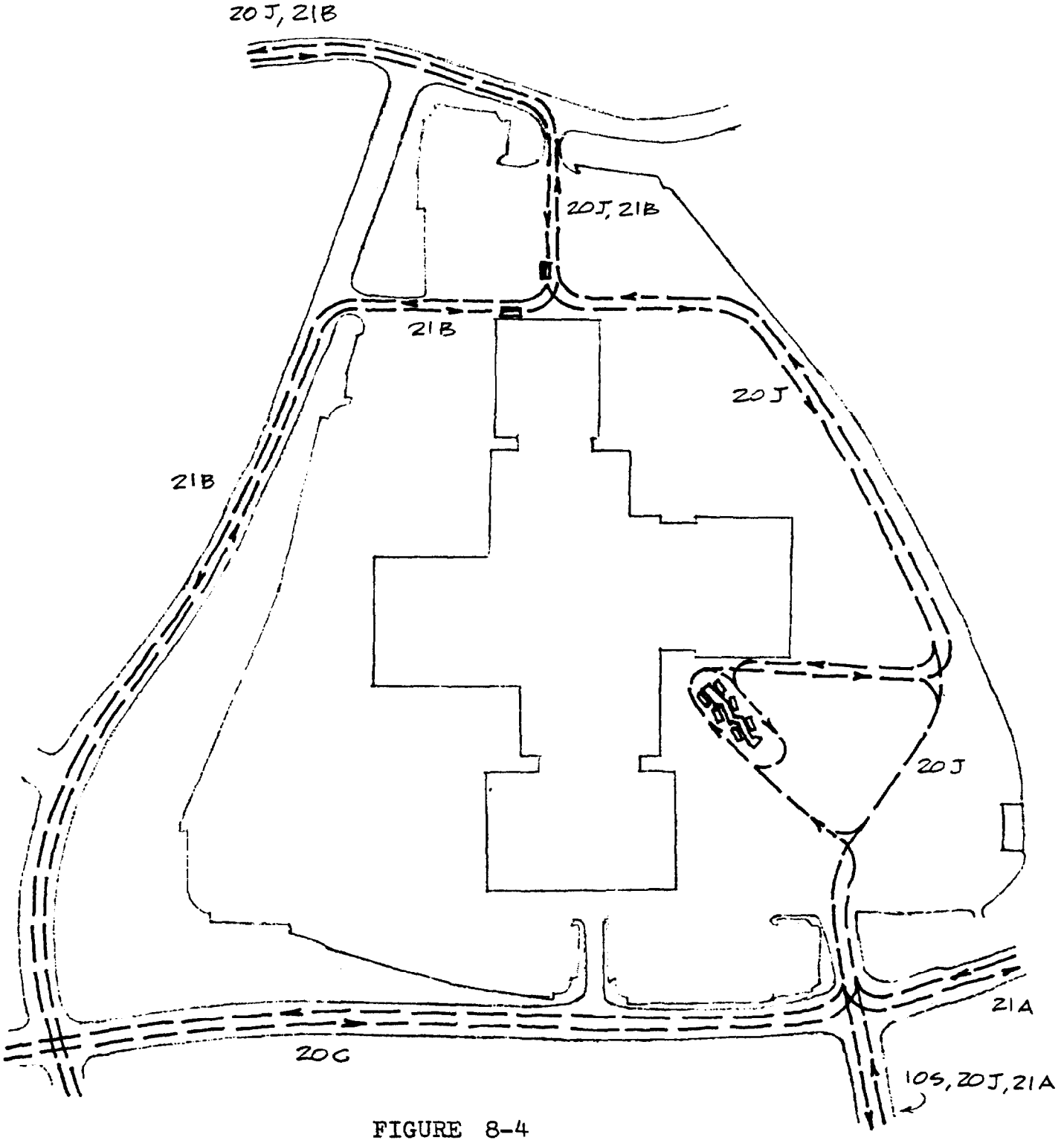


FIGURE 8-4

BUS STOP LOCATION PLAN C
INCLUDING ROUTES OF SAMTRANS BUS LINES

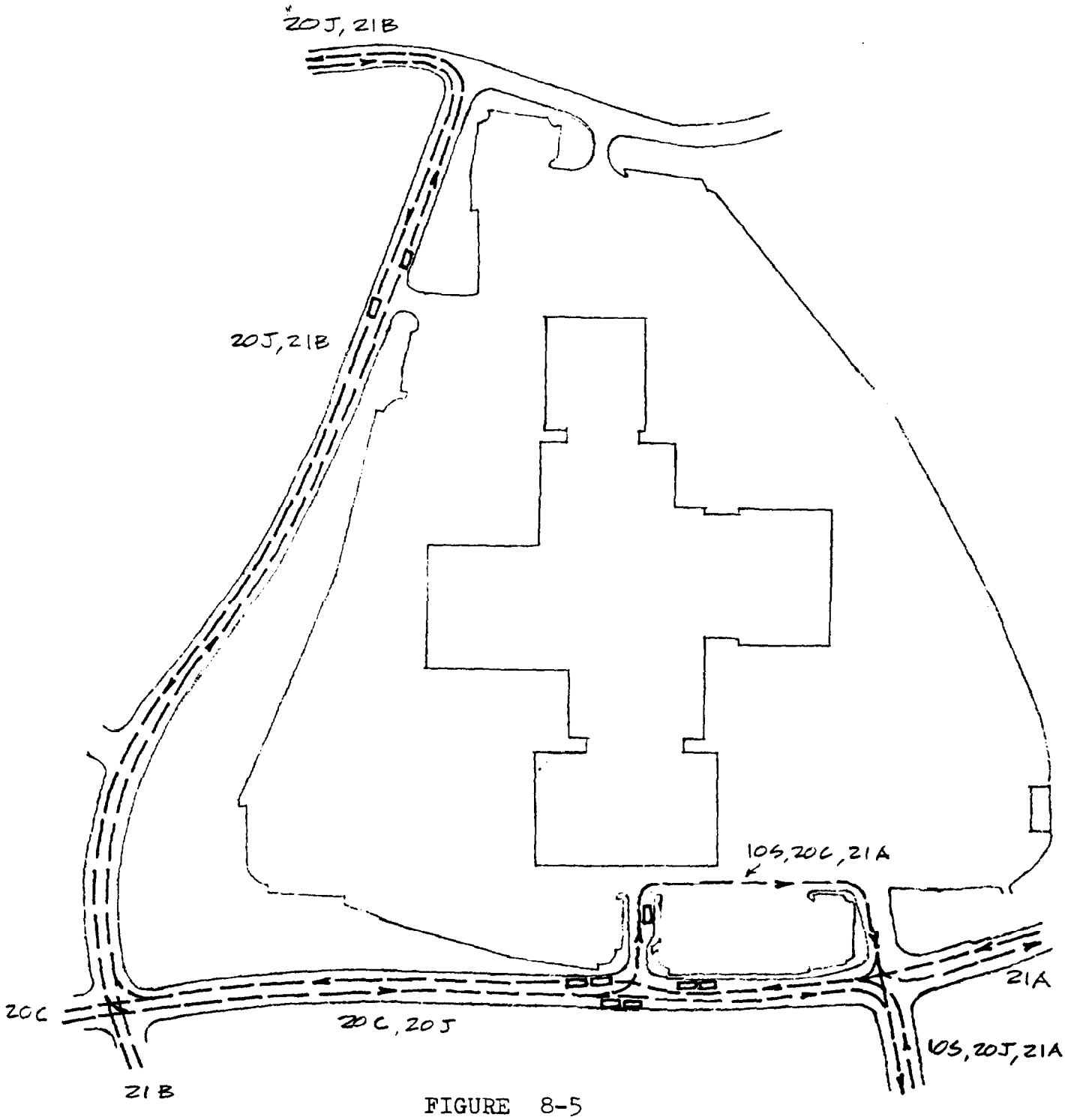


FIGURE 8-5

BUS STOP LOCATION PLAN D
INCLUDING ROUTES OF SAMTRANS BUS LINES

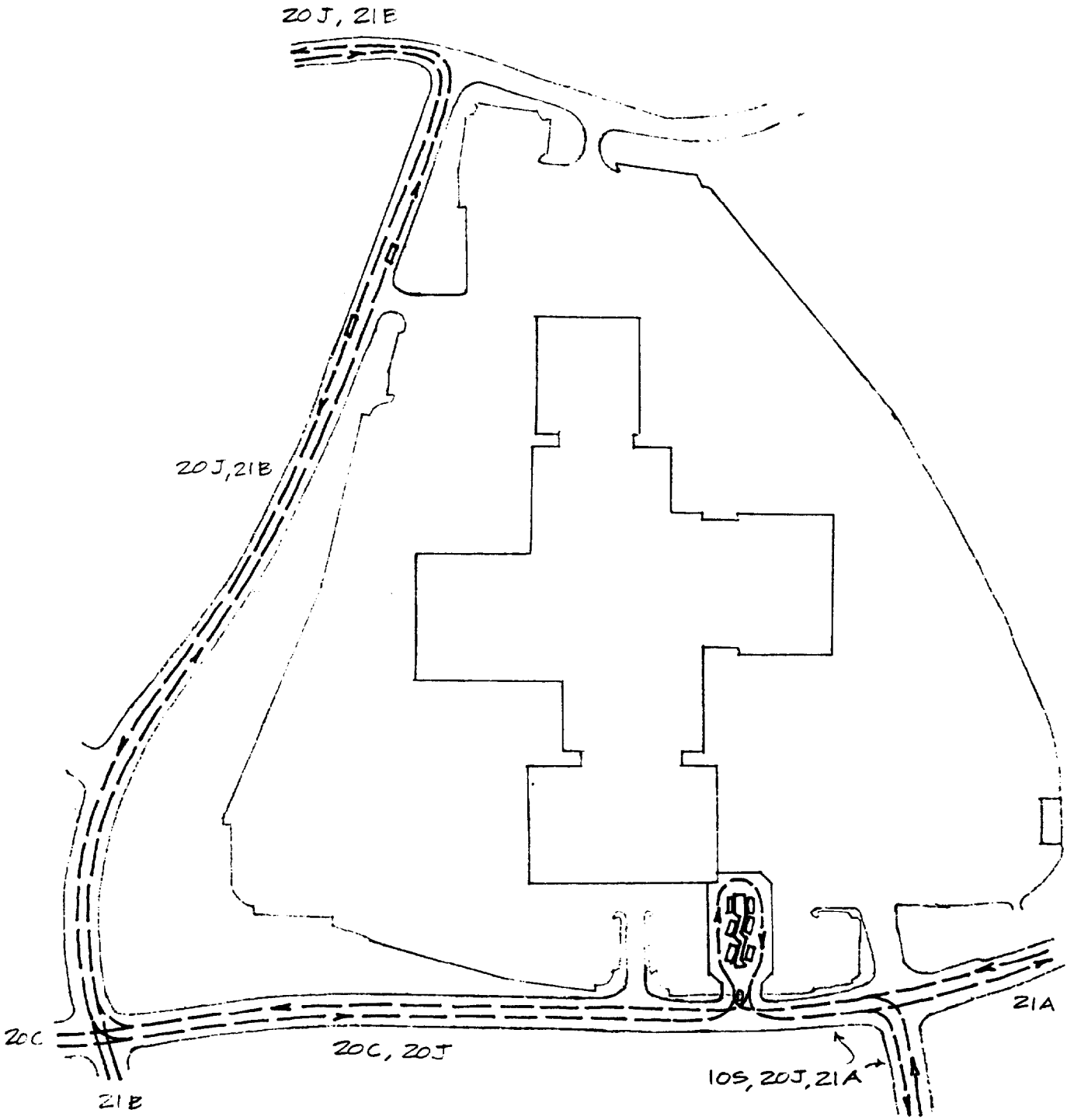


FIGURE 8-6

BUS STOP LOCATION PLAN E
INCLUDING ROUTES OF SAMTRANS BUS LINES

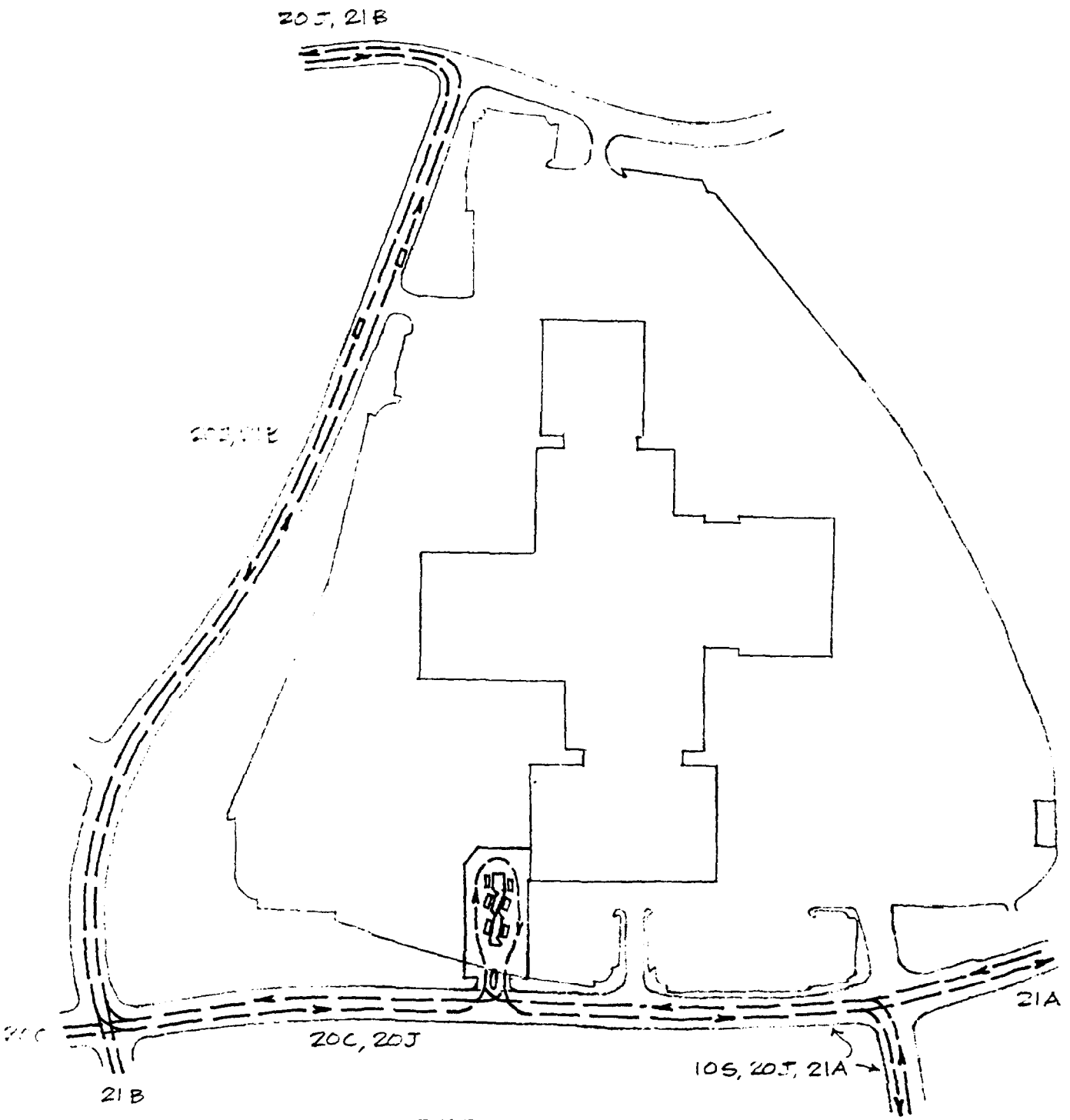


FIGURE 8-7

BUS STOP LOCATION PLAN F
INCLUDING ROUTES OF SAMTRANS BUS LINES

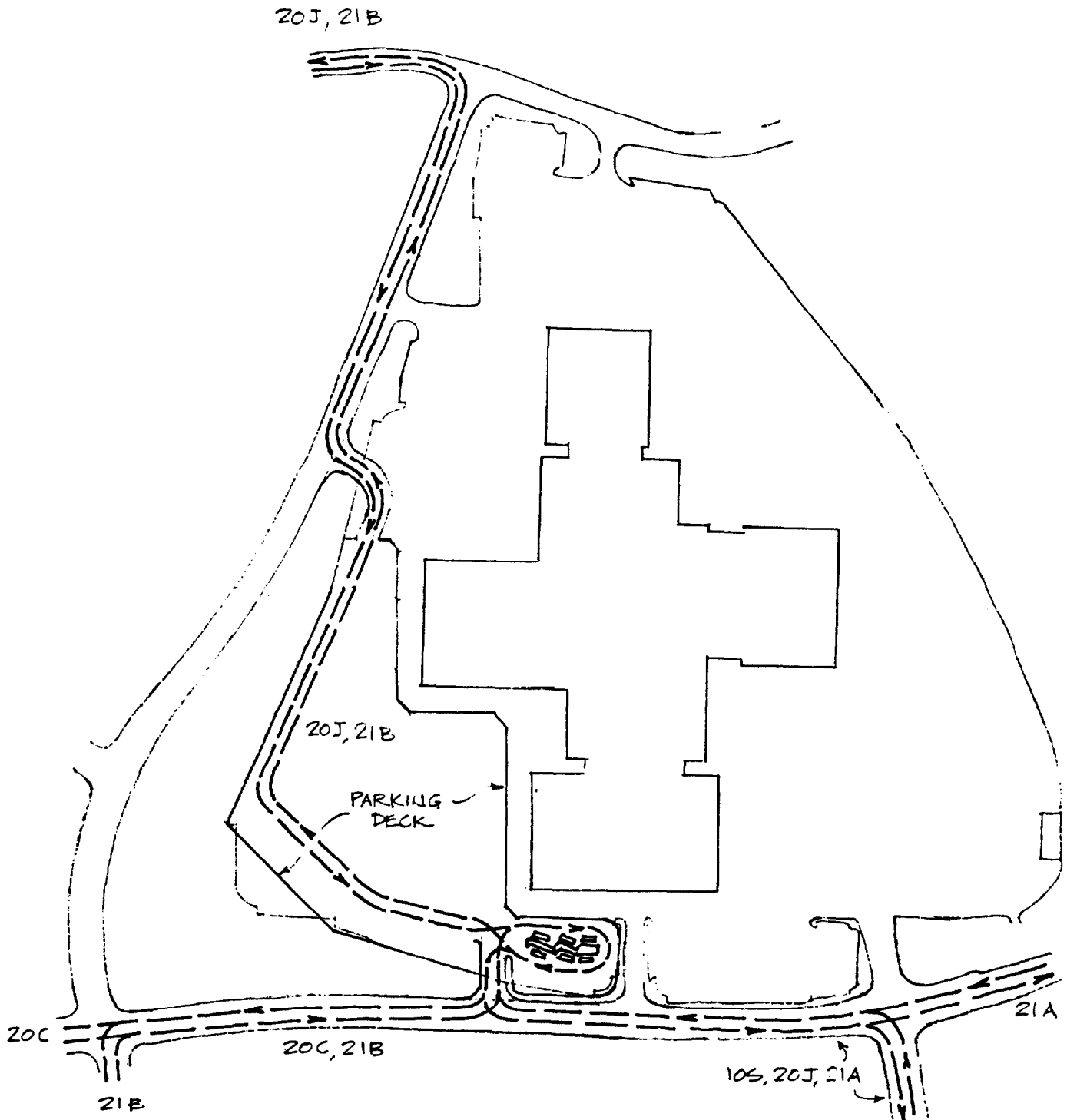


FIGURE 8-8

BUS STOP LOCATION PLAN G
INCLUDING ROUTES OF SAMTRANS BUS LINES

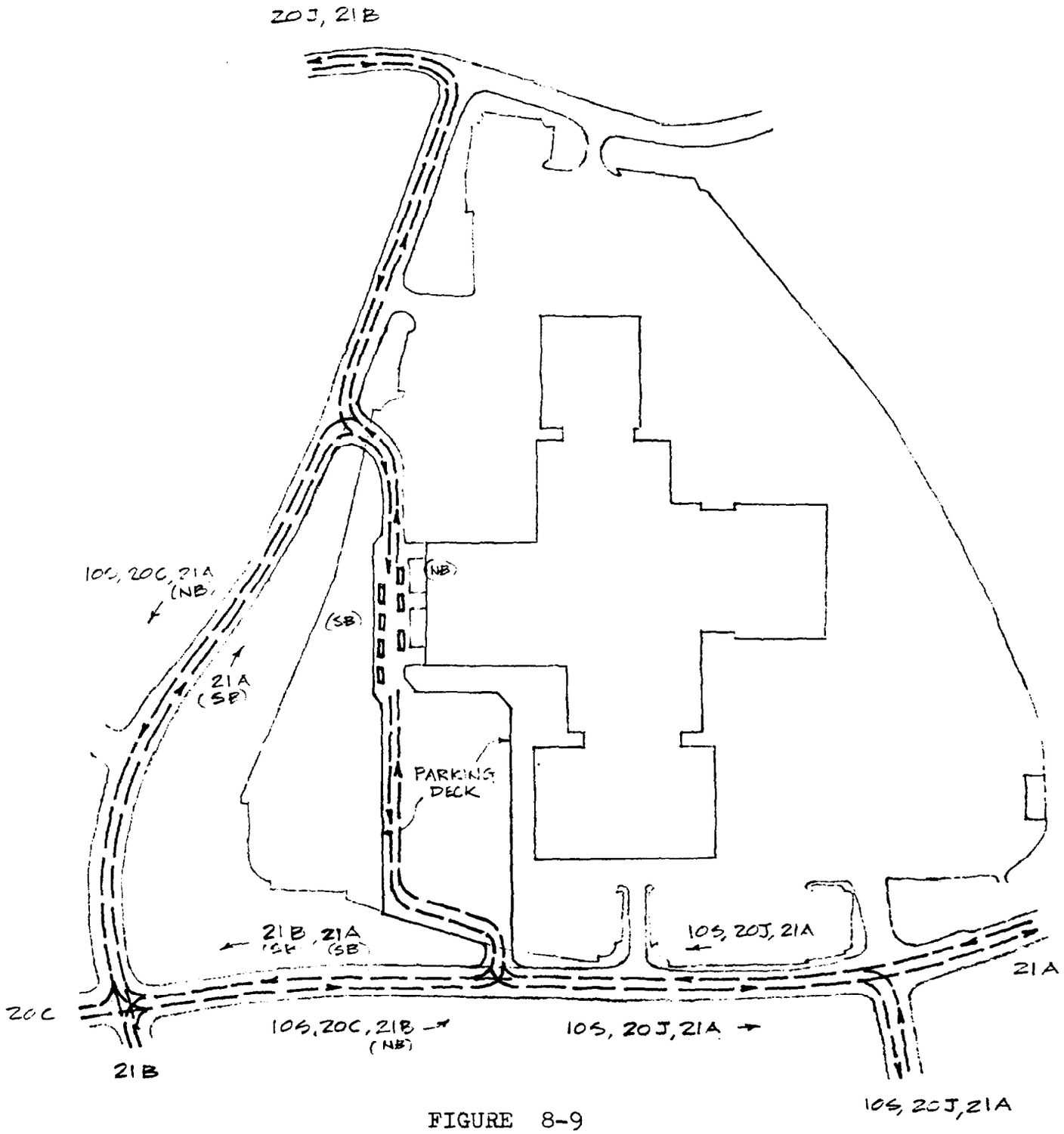


FIGURE 8-9

BUS STOP LOCATION PLAN H
INCLUDING ROUTES OF SAMTRANS BUS LINES

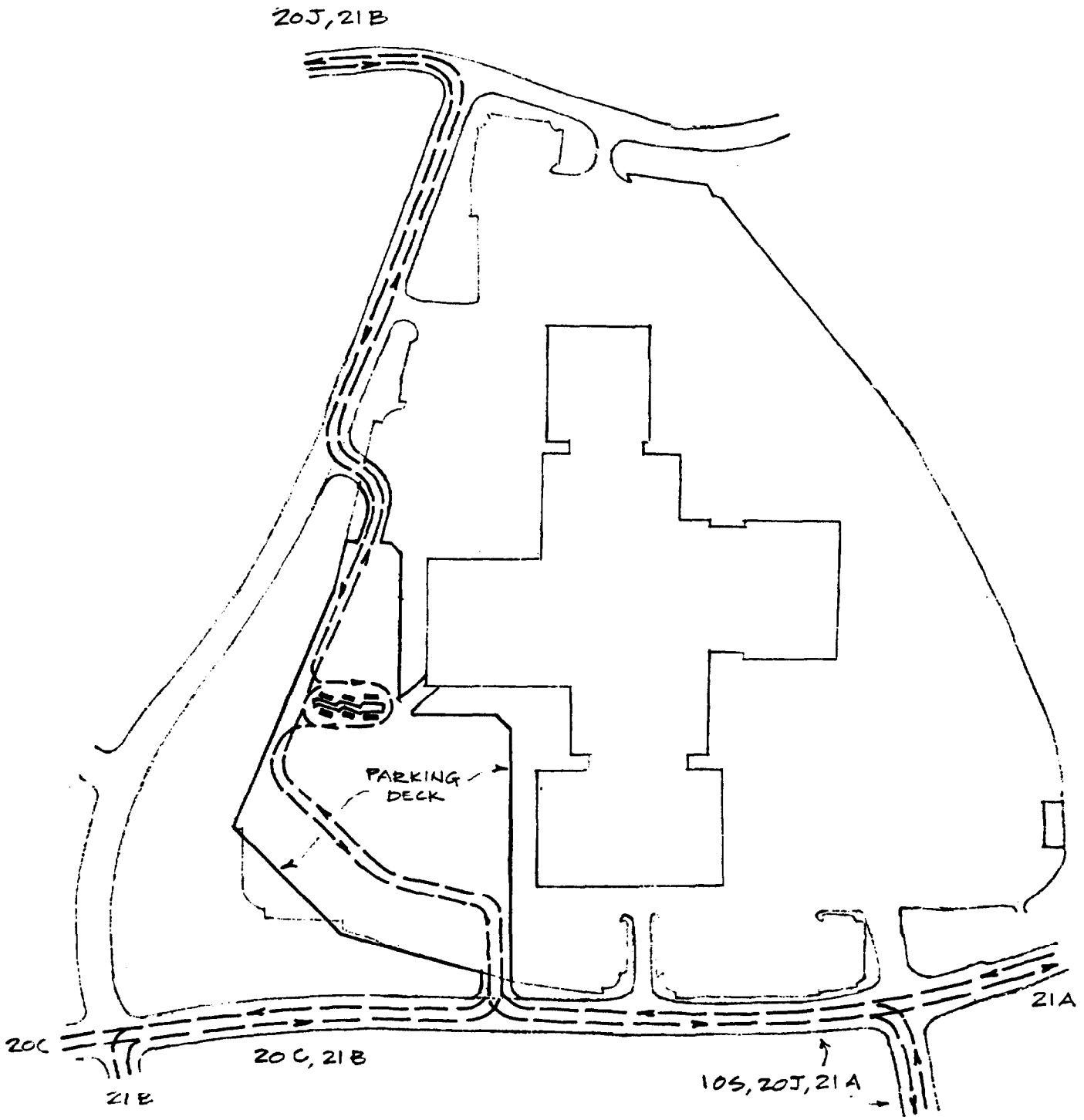


FIGURE 8-10

BUS STOP LOCATION PLAN I
INCLUDING ROUTES OF SAMTRANS BUS LINES

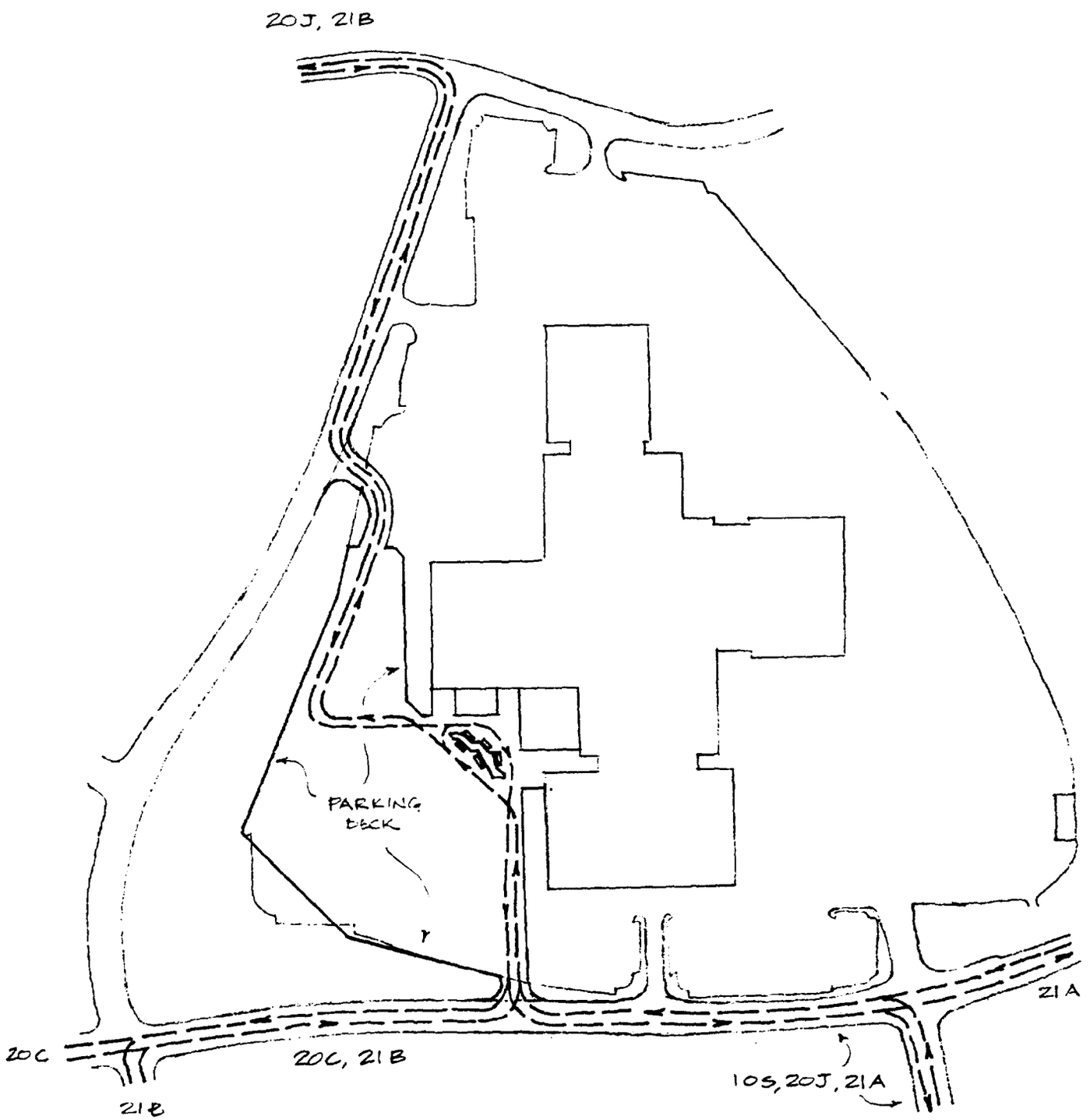


FIGURE 8-11

BUS STOP LOCATION PLAN J
INCLUDING ROUTES OF SAMTRANS BUS LINES

A. Shopping Center Expansion

The bus stop location plans had to consider the range and effects of possible future shopping center expansion. Although the extent and timing of plans for future expansion are not yet decided, the possibilities for expansion are under study, and significant but lesser changes and improvements are being made continuously. For the purposes of this study, the range of possible shopping center growth and expansion is divided into two categories: (1) moderate improvement and (2) optimal long-range expansion.

Moderate improvement includes internal remodelling, other changes within the existing buildings, and implementation of the parking and circulation improvement (PCI) plan. There could be some increase in effective retail floor area in this category of change, but the quantity of increased floor area is not likely to be large. It is assumed in this study that total retail floor area for this category of growth would be in the range of 860,000 to 900,000 square feet.

Optimal Expansion is considered at this time to include the future addition of one major store with a floor area of about 50,000 square feet; and a number of smaller shops with an aggregate floor area of about 175,000 square feet. Therefore, the net increase would be in the order of about 225,000 square feet, bringing the total to nearly 1,100,000 square feet of retail floor area.

It now seems likely that most of the expansion under the optimal condition will take place on a second level, above the existing retail space, and that additional parking spaces will have to be provided--probably on a deck in the southwest quadrant of the shopping center site. Previous studies indicate that the most likely access arrangement for a future parking deck will be through two new entrances, one on Serramonte Boulevard and one on Callan Boulevard, as indicated in Figures 8-8 through 8-11 (Bus Stop Location Plans G through J).

A parking deck in the southwest quadrant could be added in Plans A through E, but Plans H through J require construction of a parking deck before the bus stop can be placed in operation. Plan F would preclude direct access from Serramonte Boulevard to a future deck, although a new entrance on Callan Boulevard could be used with that plan to serve a parking deck, possibly with an on-site ramp for cars using the Ward's entrance. Plan G could be phased to provide either the bus deck or the parking deck as a first stage.

Therefore, Plans A through G apply for the moderate improvement category of shopping center growth. Plans B through J apply for the category of optimal expansion.

Although the earliest shopping centers in the Detroit area, Northland and Eastland, built in the early 1950s, included bus-only roadways, very few of the large shopping centers in the U.S. today have been designed to allow reasonable access by transit vehicles. In recent years, Eaton Center in Toronto has developed an excellent transit access system that delivers passengers at the heart of retail activity. Closer at hand, Stonestown Shopping Center, just north of Serramonte Center, has been able to attract the highest transit patronage of any regional shopping center in California (approximately 10%). Until recently, transit service at Stonestown delivered passengers to the "front door" of the shopping mall. This has led

to a greatly reduced parking requirement (3.8 spaces per 1,000 square feet).

Earlier, long range optimal growth plans, prepared by Serramonte Center consultants, indicated a multi-level expansion plan to be built at the western side of the existing center. This multi-level plan included an exclusive busway at the second level which would have: (1) delivered passengers at the heart of the Center's retail activities, and (2) separated SAMTRANS buses from auto traffic throughout the site. While this multi-level approach is still a long range possibility, other alternatives, more modest in cost, are seen by Serramonte Center as being appropriate for the time horizons of this study. This approach is still an option as part of the second deck alternatives shown in this report (Alternative G through J).

B. Descriptions of Alternative Plans

Plan A (Figure 8-2) represents existing conditions, with the bus stop and the circulation roads in their present locations. It is included as a base from which other alternatives can be compared.

All of the other plans (B through J) assume that the circulation roads would be changed in accordance with the proposed parking and circulation improvement (PCI) plan. The PCI plan includes changes in the arrangement of parking spaces that increase the total number on the site by about 250 spaces.

Plan B (Figure 8-3) retains the existing bus stop in its present location, near the southeast corner of Mervyn's. The only changes from existing conditions would be relatively minor changes in bus routings because of the proposed changes in the circulation road system on the site, and the increase in parking spaces because of the parking arrangement in the PCI plan.

It is included as the prime Moderate Improvement alternative.

Plan C (Figure 8-4) places the bus stop south of Mervyn's, near the entrance in the inner southeast corner where there is a pedestrian entrance to the mall. The bus stop position puts bus passengers closer to the center of retail activity, and is included because this plan provides shorter walking distances for bus passengers to all shops in the center.

The northbound routing of 21B is changed to bring it into the site at the north side of Macy's, which matches the southbound routing. The change is made feasible because of the intersection improvements in the PCI plan. The improvements include increased turning radii and separate left-turn lanes at the two on-site intersections immediately north and west of Macy's.

In Plan C, travel distances are increased for all bus lines and there is a net loss of about 50 parking spaces, compared to Plan B.

Plan D (Figure 8-5) is included because it attempts to move all bus routes off the shopping center site. The principal bus stop location is at the curb on Serramonte Boulevard near the entrance just south of Montgomery Ward. The intersection would be controlled by stop signs on all three approaches, and crosswalks would be placed across Serramonte Boulevard at the intersection. Bus bays could be built along the curb on both sides of the street. Bus layover space could also be provided at the curbs.

Some of the bus lines (10S, 20C and 21A) serving the shopping center must return the way they came, but it would not be feasible for buses to make U-turns on Serramonte Boulevard. Plan D includes a one-way bus loop within the site from the Ward's entrance eastbound to the Gellert entrance so that buses can turn around.

The 20C buses would turn left into the Ward's entrance and would not be able to stop at the curb on Serramonte Boulevard. A stop position for 20C buses is shown at a bus bay on the east side of the Ward's entrance road.

Bus travel distances are decreased in Plan D for all lines except 20J. Walking distances between the bus stop and retail stores in the center are generally increased.

Removing the bus stop from the site permits the largest number of parking spaces at ground level. The total number of on-site parking spaces in Plan D is about 4,950, assuming installation of the PCI plan.

Plan E (Figure 8-6) places the bus stop on a deck above the parking lot near the southeast corner of Montgomery Ward. Buses enter the deck directly on a short ramp up from Serramonte Boulevard at a point approximately 200 feet from the Ward's entrance and 300 feet from the Gellert entrance. The parking lot surface is approximately five or six feet below street level where the ramp is located. The parking lot slopes down to the north from there. Some excavation to reduce the parking lot level, combined with a slight rise on the short ramp up to the deck, could provide sufficient clearance to retain parking, or other uses, under the bus deck.

As shown in Figure 8-6, the deck would span the circulation road that runs east and west along the south side of Montgomery Ward, and there would have to be sufficient clearance for trucks to pass beneath the deck. The extra clearance requirement could be avoided by keeping the north edge of the deck south of the circulation road and leaving a gap between the deck and the Montgomery Ward building, in which case bus passengers would go to the ground level from the deck and cross the circulation road at grade.

The deck arrangement shown in Figure 8-6 is schematic only, and could be varied, in shape, size, placement, and treatment of buses, to produce a number of alternative designs.

Plan E is included because all bus travel is removed from the shopping center's circulation roads and buses are kept separate from on-site auto traffic, the average travel distance for buses is reduced almost as much as in Plan D, and the average walking distance for bus passengers is only slightly less than in Plan D. The total number of parking spaces on the site would be the same as in Plan D, unless the space beneath the deck were used for other purposes. If Ward's auto accessory store were moved to that space, the present space occupied by the existing auto accessory store could be converted to parking and the number of spaces on the site could be kept at about the same total as in Plan D. (Note that a new median opening and traffic control device would be required on Serramonte Boulevard to accommodate turning buses.)

Plan F (Figure 8-7) is similar to Plan E, but places the bus stop at the southeast corner of Montgomery Ward, with a bus entrance about 300 feet west of the Ward's entrance.

Plan F is included because Serramonte Boulevard rises on a fairly steep grade west of the Ward's entrance, and the bus entrance and bus deck would be level, with sufficient clearance over the parking lot and on-site circulation road for trucks to pass under the deck. Bus passengers have access from the deck to the shopping center at the second-floor level through Montgomery Ward.

Walking distance for bus passengers is the same as for Plan E, but the reduction in average bus travel distance is slightly less than with Plan E. The total number of parking spaces at ground level is about 4,950, the same as in Plans D and E.

The remaining plans, G through J, all show added decks for second-level parking above the ground level parking lot in the southwest quadrant of the shopping center. In each of these remaining plans, a bus stop is located on some portion of the deck, and some bus lines are routed through the shopping center on the deck. Access to both the parking area and bus stop are provided through new entrances on Serramonte and Callan Boulevards.

Plan G (Figure 8-8) places the bus stop south of Montgomery Ward. Buses use the same entrance that automobiles use for access to parking spaces on the deck. Compared to existing conditions, Plan G would decrease the average bus travel distance for line 20C, but would increase distances for all other lines, and the aggregate travel distance would be only slightly less than the present condition. Walking distance for bus passengers would be the same as in Plans E and F. Plan G is included because the parking deck shown would add more than 900 parking spaces, resulting in a total of about 5,880 spaces.

Plan H (Figure 8-9) provides a smaller parking deck than Plan G, and places the bus stop at curbs on the deck at the west side of the shopping center near Longs and QFI. The bus stop arrangement in this plan does not provide sufficient space for buses to turn around; therefore, some buses must turn around by completing a loop through the intersection of Callan and Serramonte Boulevards. Plan H is included because bus passengers have close-in, direct access to the second level of the shopping center above Long's and QFI by walking across a short bridge from the bus stop. Three pedestrian bridges are indicated in the figure.

Average bus travel distances are increased substantially by Plan H, and the walking distances for bus passengers are substantially reduced. The smaller parking deck shown in Figure 8-9 provides about 400 additional parking spaces, bringing the

total on-site parking to about 5,350 spaces. This plan would not preclude further expansion of the parking deck to add more spaces in the future.

Plan I (Figure 8-10) is included because it keeps the bus routes near the outer edge of the parking deck and places the bus stop island near the southwest corner of QFI. The travel distances for buses are longer in this plan than in Plan H, and the bus passenger walking distance is slightly longer. Approximately 5,810 parking spaces are provided.

Plan J (Figure 8-11) places the bus stop on the parking deck at the inner southwest corner, near the center of the mall. The aggregate bus travel distance is approximately the same as the existing condition in Plan A. Plan J is included because the walking distance to the center of the mall, at the second level, is relatively short, about the same as in Plans C and H. Total parking spaces are the same as in Plan I, about 5,810 spaces.

(Postscript: Subsequent to the drafting of this report, an additional alternative was devised by SAMTRANS staff. This alternative locates the bus stop along the new peripheral road on the Serramonte site shown on the PCI Plan, just north of the existing bus shelter. This alternative is a product of this study, and includes the widening of the perimeter road to allow SAMTRANS buses to pull out of the flow of traffic, and to provide layover space. This alternative might be implemented when the Serramonte parking areas are restriped--with Alternative E to be built in the future. Under this scheme, care must be taken to avoid blocking the free flow of traffic at the ends of adjacent parking bays.)

c. Comparison of Location Plans

Comparative information was developed for each plan, including length of bus routing, pedestrian walking distance, length (on the shopping center site) of roadway used by buses, effect on the number of parking spaces, and the indicated effect of parking changes on potential expansion of retail floor area.

Table 8-1 lists, for each alternative plan, the average change in distance of bus travel (compared to existing conditions) for each of the five bus lines serving the site. The listed change in travel length applies to each one-way bus trip to or from the bus stop location. Each change in bus travel distance was multiplied by the total number of scheduled bus trips to and from the bus stop on a weekday. The total change for all bus lines was converted to daily bus-miles and listed in Table 8-2 for each alternative plan.

The change in total bus-miles, as listed in Table 8-2, ranges from a net decrease of 17.4 miles daily with Plan D to a new increase of 35.0 miles daily with Plan I. Plans B, C, H and I all cause significant increases in the aggregate distance travelled by buses. Plans D, E and F bring substantial decreases, and Plans G and J cause only minor reductions.

Table 8-2 also lists the type of bus stop construction, length of roadway that would be regularly used by buses on the shopping center site, and the walking distance

TABLE 8-1

AVERAGE CHANGE IN LENGTH OF BUS TRAVEL
FOR EACH ONE-WAY BUS TRIP TO OR FROM SERRAMONTE STOP

Plan	Change in Bus Travel Distance in Feet, By Bus Line Increase (Decrease) Compared to Existing, Plan A				
	10S	20C	20J	21A	21B
B	200	200	300	200	0
C	200	200	400	500	200
D	(300)	(1,000)	500	(300)	(200)
E	(400)	(1,200)	800	(400)	(200)
F	200	(1,800)	800	200	(200)
G	300	(1,500)	400	300	800
H	2,000	(900)	0	2,000	400
I	1,300	(600)	400	1,300	700
J	700	(1,200)	100	700	400

TABLE 8-2

COMPARISON OF ALTERNATIVE BUS STOP LOCATION PLANS INCLUDING TYPE OF BUS STOP CONSTRUCTION, CHANGE IN BUS-MILES, WALKING DISTANCES & LENGTH OF ROAD USED BY BUSES

	Type of Bus Stop	Increase (Decrease) in Daily Bus Miles	Walking Distance, in Feet, from Stop to Center of Retail	Length, in Feet, of Roads on Site Used by Buses
A	Pad	0	900	5,000
B	Pad	16.3	900	4,000
C	Pad	26.6	600	5,000
D	Street Curb	(17.4)	1,200	1,000
E	Deck	(15.6)	1,100	0(1)
F	Deck	(13.7)	1,100	0(1)
G	Deck	(5.8)	1,100	1,900(1)(2)
H	Deck	32.5	600	1,600(2)
I	Deck	35.0	800	1,800(2)
J	Deck	(1.6)	600	1,700(1)(2)

(1) Does not include roadway on exclusive bus deck.

(2) Roadway is all on deck.

from the bus stop location to the center of the retail shopping area. The type of bus stop construction is listed as "pad", "street curb" or "deck" to indicate a general level of relative cost. The "pad" designation refers to pavement at ground level. "Deck" indicates a structure for buses above ground level with parking or other uses beneath the deck.

The street curb location (Plan D) would have the least cost, although paving and curb reconstruction would probably be required for bus bays on both sides of Serramonte Boulevard and on the east side of the Ward's entrance road.

Pad construction would be more costly than the street curb, and would require substantially greater pavement depths than existing on the bus access roads to the pad location. Deck construction would be more expensive than the pad--perhaps by a factor of 10. For plans E and F, deck construction would eliminate the need for bus roads on the shopping center site.

The lengths of circulation roadways on the site that are used by buses (see Table 8-2) range from none for Plans E and F to 5,000 for Plans A and B. The roadway used by buses in Plans G through J range from 1,600 to 1,900 feet, but are all located on parking decks. The initial cost of roadway on a deck would be high, but maintenance and replacement costs could be substantially less than on the existing circulation roads.

Walking distances from the bus stop to the center of retail activity (see Table 8-2) range from 600 feet for Plans C, H and J, to 1,200 feet for Plan D. Plans E, F and G all have walking distances of 1,100 feet. The existing bus stop location, as in Plans A and B, has a walking distance of approximately 900 feet.

Table 8-3 lists for each plan the added number of parking spaces compared to existing conditions, the total number of spaces provided in the plan, and the additional retail floor area that could be served by the added parking spaces. The additional floor area is listed for two parking space indexes (5.0 and 4.5 spaces per 1,000 square feet of retail floor area). The additional floor area in Table 8-3 is based only on the added parking spaces.

Table 8-4 indicates the total retail floor area that could be supported by the total parking in each plan with 5.0 and 4.5 parking space indexes under two leasing conditions. The first condition assumes the current leases that the shopping center has with its major tenants. Current leases would require nearly all of the approximately 4,650 existing parking spaces for existing tenants. Only the added spaces above 4,650 could be used to support new retail floor area. This is the same condition assumed in Table 8-3.

The second condition assumes that new leases with existing major tenants would incorporate the new parking indexes so that the parking index shown could be applied to the

TABLE 8-3

ADDED AND TOTAL PARKING SPACES, BY PLAN, AND POTENTIAL RETAIL FLOOR AREA INCREASES BASED ON PARKING SPACES ADDED

Plan	Parking Spaces		Potential Increase in Retail Floor Area in Square Feet	
	Added	Total	At 5.0* Index	At 4.5* Index
A	0	4,650	0	0
B	250	4,900	50,000	56,000
C	200	4,850	40,000	44,000
D	300	4,950	60,000	67,000
E	300	4,950	60,000	67,000
F	300	4,950	60,000	67,000
G	1,230	5,880	246,000	273,000
H	700	5,350	140,000	155,000
I	1,160	5,810	232,000	258,000
J	1,160	5,810	232,000	258,000

* Parking Index in parking spaces per 1,000 square feet of retail floor area.

TABLE 8-4

TOTAL RETAIL FLOOR AREA POTENTIALS OF ALTERNATIVE PLANS BASED ON PARKING SPACES AND PARKING INDEXES

	Retail Floor Area in 1,000s of Square Feet			
	With Current Leases (Parking Index Applies Only to Added Parking Spaces)		With New Leases (Parking Index Applies to Total Parking Spaces)	
Plan	At 5.0* Index	At 4.5* Index	At 5.0* Index	At 4.5* Index
A	860	860	930	1,032
B	910	916	980	1,087
C	900	904	970	1,077
D	920	927	990	1,100
E	920	927	990	1,100
F	920	927	990	1,100
G	1,106	1,133	1,176	1,305
H	1,000	1,015	1,070	1,188
I	1,092	1,118	1,162	1,290
J	1,092	1,118	1,162	1,290

* Parking Index in parking spaces per 1,000 square feet of retail floor area.

total number of parking spaces at the shopping center. The second condition allows more retail floor area to be built for the same total number of parking spaces.

Without adding more parking spaces to the existing total, the second leasing condition could support the addition of about 70,000 square feet of retail area with a 5.0 parking index, and about 170,000 square feet with an index of 4.5. If transit were used effectively to reduce the number of parking spaces required it could help to reduce the existing parking space index, which is approximately 5.4.

D. Agency and Center Reviews

This section of the report summarizes the comments made by the Transit Agency and the Shopping Center representatives in workshop meetings that were held to discuss the alternative bus stop locations. Each party, in a separate workshop, discussed the bus stop locations and made its choice, without being influenced by the other party. However, both the Agency and the Center selected the same location, Plan E, as their preferred alternative. The Agency also favored Plan D, as a possible second choice if E should prove too costly.

Following are comments on Plan E that were made in the workshop meetings. After that are comments on the other plans. At the end of this section are other, more general, comments that were made at the workshop meetings.

Plan E was favored by the Center because Plan E removes buses from the internal circulation roads and therefore eliminates the road repair problems associated with buses operating on the site. The Center was interested in the possibilities of retail uses under the bus deck, including the possibilities of banking or automobile accessories.

The Agency liked Plan E because it reduced conflicts between buses and autos within the Serramonte parking lot, would place the bus stop closer to other businesses and could better serve a larger number of businesses. The Agency also liked the fact that the plan provided trade offs for the Center, by converting the existing bus stop into parking spaces and removing buses from the internal roads.

Both parties acknowledged the benefits of Plan E in improving bus operation and headways through shorter travel distances and fewer delays. Both parties were pleased that Plan E would provide a permanent solution, and the Agency liked the fact that Plan E was independent of the Center's future decisions on parking; however, the Center was uncertain whether it should make a commitment to the plan before future expansion plans are decided. The Center also liked the fact that the bus stop was not directly in front of a store's doorway.

Both parties were concerned about the possible high cost of Plan E and stated that a cost-benefit analysis would be needed before a decision could be made. Both parties were also concerned that the bus entrance might be too close to Ward's entrance and to Gellert Boulevard. In addition, the Agency expressed concern over providing for bus layovers and turnarounds, and the need for elevators and other provisions for elderly and handicapped persons.

Additional comments on Plan E by the Agency were to question whether more bus positions and layover spaces will be needed, to point out the need for pedestrian access from the bus deck to ground level, to request an exclusive right turn lane for buses entering the bus stop from Serramonte Boulevard east, to ask about possible use of the street curb for bus layovers, and to state that stop signs on Serramonte Boulevard would be "ideal" for the bus operation at the bus entrance. The Center commented that the bus deck should not extend over a circulation road.

The Center was interested to know whether Federal or other public funding assistance might be available. The Agency commented that it would probably select E quickly if the Center would pay the costs, but if the Agency were to pay part, it would have to carefully compare the costs of all the reasonable options.

Following is a summary of comments on the other alternative plans.

Plans A and B were not favored by the Agency because of travel distance and loss of time for buses going onto the site, because of conflicts with automobiles and pedestrians, the the greater likelihood of accidents. The Center considered these plans as possibilities because of their investment in the existing bus facility, but were concerned about the costs of repairing the damage to circulation roads that buses would cause.

Plan C was not considered favorably by either party, but the Center acknowledged a possible benefit in the shorter walking distance to the retail center for bus passengers. The Agency commented that the bus stop in Plan C was too far inside the site, it would cause bus conflicts with other vehicles, and would increase bus delays.

Plan D was almost as desirable, to the Agency, as Plan E, because it simplifies bus operation and the costs would be low. The Center considered it undesirable for its long walking distance from the retail center, and because it requires buses to force their way into heavy outbound traffic at the Gellert entrance. It was pointed out that the Ward's entrance intersection on Serramonte Boulevard requires a three-way stop to break up the traffic flow on Serramonte Boulevard and reduce the delays and backup of traffic waiting to turn onto Serramonte Boulevard from the shopping center.

Plan F was considered by the Agency because it seemed better to have the bus entrance further from Gellert Boulevard than in Plan E, but the Agency acknowledged Plan F's undesirable feature of precluding automobile access at that location for a possible future parking deck. The Center raised questions about the relatively steep up-grade on Serramonte Boulevard going west from the Ward's entrance, and whether the plan would be feasible if costly street reconstruction were needed to improve the grade at the bus entrance.

Plans G through J were considered less desirable because they mix buses and automobiles, and because they cause longer travel distances for buses. It was acknowledged that Plan G could be staged and would avoid precluding automobile access to a future parking deck, and it was noted that future parking access to a deck might be provided by a ramp from ground level for traffic entering at the Ward's entrance. It was not pointed out that bus routing for Plan G could be similar to the routing in Plan F, which would significantly reduce the average bus miles. The Center was concerned that the waiting area for bus passengers in Plan H might be too close to the store front. The Center acknowledged that the location of the bus stop in Plan J could be beneficial in reducing the walking distance to the retail center for bus passengers.

E. General comments on criteria, objectives and procedure that were made in the workshops are summarized below. Fourteen comments are listed. They are divided among four categories: agreed, disagreed, partial differences, and other. There are 6 general comments on which both parties agreed and two on which they disagreed. There were partial differences on three comments. The three remaining comments were not subject to agreement or disagreement between the parties.

The following comments were made separately by the Agency and Center, but the comments were essentially the same by both parties.

1. Buses should be separated from other traffic. The Center had observed exclusive transitways at

shopping centers in other cities, and believed they worked effectively. The Agency commented that pedestrian conflicts also delay buses.

2. Bus passenger waiting areas close to store fronts tend to cause problems, such as crowds that block store entrances and window displays, and interfere with pedestrian circulation. It was noted that they also tend to be accompanied by more vandalism and shoplifting.

3. An analysis of costs and benefits will be required before a decision can be made on the bus stop location and station design. The Center pointed out that approval by its lender would be required.

4. The design of the station will be a joint effort, in which the Center will be in charge of the work, and will be responsible for design costs. The Agency will be concerned only with operational features and will review and advise on those aspects of the design.

5. Both parties would probably be subject to liability for accidents on the shopping center site involving buses or the bus station, and both parties require coverage.

6. It would be desirable to seek some form of public assistance in the funding or financing of the bus station construction. The Agency commented that the City may be interested in participating, or there may be some form of Federal assistance available. The

Center commented that a low-interest loan to the Center, perhaps based on a City bond, might be sufficient.

The Center and the Agency had different positions on the following two items:

7. The Agency expressed a strong interest in using some available portion of the shopping center parking lot for SamTrans' park-and-ride customers, and it observed that there seem to be vacant parking spaces most of the time. The Center was opposed to any authorized commitment to reserved parking for park-and-ride on the site because it would violate provisions of its leases with tenants. The Center was also concerned that authorization of parking for other purposes than shopping center uses would set a precedent for use by other groups, such as apartment residents and off-site office workers. The Center was also concerned about theft and break-ins of cars left on the lot all day, the liability for these incidents, and the cost and responsibility of specially policing for a park-and-ride area. The Agency pointed out that some transit riders already use the parking lot unofficially and that the Agency knew of solutions found in other shopping centers in other areas for the same kinds of problems that the Center was concerned about. The Agency would like to use some designated area of the Center's lot on weekdays only for the portion of the year when the spaces in that area would not be needed for shoppers, and hoped that it could arrange with the Center for a short test of the idea during a season when it would not interfere with shopping at the center.

8. The Center expressed a strong concern over the cost of repairing the internal circulation roads that failed under constant use by the heavy buses, and it wanted to find a way to recover the costs of damage caused by public buses. The Agency has a policy against assuming responsibility for any roadways, and would avoid establishing a precedent through paying a share of the repair costs on the shopping center site. The Agency felt that establishment of the precedent would probably put the transit service out of business, and it would have to remove bus services from the site rather than agree to pay for road maintenance.

There was some agreement and some difference of position between the Center and the Agency on the next three items.

9. Both parties recognized some potential benefit from locating the bus stop closer to the center of retail activity. The Center indicated that it gave some importance to a shorter walking distance for bus passengers, but it did not select a bus stop site that provided a shorter walking distance. The Agency staff were mixed in their opinion. There was some belief that shorter walking distances would help to attract transit patrons, but there was also a belief that longer walking distances would not deter transit users. It was pointed out that no factual studies of the relationship between ridership and walking distance had been made.

10. Both parties were attracted by the possibility of finding a permanent solution to the problems of providing transit service to the shopping center. The Agency was interested in a facility that would end problems and could operate independently from the Center's concerns. The Center saw advantages in being able to settle on one permanent site for the bus stop, recognized that it might have to give up some future options for future changes on the site, and would like to minimize the number of options that it would have to relinquish.

11. Both parties were interested in negotiating an agreement on responsibility for maintenance of the bus stop facility and shelter. The Agency hires a contractor to maintain its shelters, but the Center has been maintaining the one on the shopping center site. The Center pointed out that there are cost items involved such as maintenance of landscaping, steamcleaning, security, window-washing, repairs, and electrical bills.

The last three items were general comments by one or the other of the parties, and did not involve questions of agreement.

12. The Center had observed the success of retailing in some transit stations in other cities and felt it is a reasonable possibility that some retail uses could be placed within or near a bus station on the shopping center site. There was some concern, however, that the

bus patronage may not be sufficient to support such retail uses. It was pointed out that the success of such retail uses would probably depend in part on attracting some shoppers to the bus station area from the mall.

13. The Agency was interested in the likely schedule, size and physical layout of the Center's future expansion, because of the effects on the timing and treatment of the bus station plans. The Agency pointed out that Plans B through E are relatively independent of future expansion and could be implemented sooner than Plans F through J that would probably be tied to future decisions on the Center's expansion plans. The Agency also requested that the bus stop be planned for future requirements, and asked that its projections on the number of future bus positions and layover spaces be used in the bus station design. The Agency asked whether there is a possibility that a future parking deck might not be needed. The Center indicated that it would reserve the southwest quadrant of the site for possible future parking additions.

14. Both the Center and the Agency pointed out that there are very different attitudes at different shopping centers about the value of transit service. The Center commented that there is no common denominator for all centers, but the bus service was working well for the Serramonte Center. It was suggested that if shopping centers could be rated from 0 to 10 for their interest in transit and for the likelihood that transit service

would benefit their retailing, the Serramonte Center would have a rating of 8 or 9. It was thought that no other shopping center in San Mateo County would have as high a rating, and some would rate 0.

9. TRANSIT CENTER DESIGN

A. Sketch Plans

Following the selection of location "E" as the preferred site for the transit center, a sketch plan was prepared illustrating how the transit center could be developed at this location. This sketch plan became the basis for joint discussion with SAMTRANS and Serramonte staff related to operational and implementation issues involved with the transit center design. This discussion and the issues that emerged formed the basis for the design criteria that was used to develop the final sketch plan for the hypothetical transit center shown on the following pages. This design criteria can be summarized as follows:

1. The bus access point into the transit center should be located away from automobile entrances into Serramonte Center and should be exclusively for buses.

2. Bus access routes to and from the transit center must meet all standard dimensional criteria (turning radii, ramp angles, etc.).

3. Seven berths must be provided for passenger loading and unloading from SAMTRANS buses. One of these spaces must be for the newer articulated buses. In addition, future needs for flexibility expansion and more articulated buses must be accomodated.

4. Space must be provided for the layover of 5-6 SAMTRANS buses.

5. Waiting passengers must be protected from the elements (wind, sun and rain).

6. The waiting area should be safe and secure, well lit, with good visibility of oncoming buses, and should provide opportunities for passengers to sit and rest.

7. Transit route and system information maps are required, together with local street maps identifying bus stop locations in their local context.

8. The transit center must provide access for handicapped passengers and must meet all state and federal handicapped access requirements.

9. Boarding areas should be designed and located so that boarding patrons do not interfere with those disembarking or waiting to board other buses.

10. Ancillary facilities, including telephones for emergencies, information and convenience, trash receptacles to maintain cleanliness, and vending machines for convenience and revenue can complement the transit center facilities.

11. The transit center must provide benefits to Serramonte Center in terms of: revenue production through the lease of retail space at the lower level, reduction in the cost of repairing and strengthening Serramonte Center's access roads, and/or in the gain of parking spaces by removing the existing bus station from its current location.

12. The transit center structure should not block the visibility of nearby stores from Serramonte Boulevard and other local streets.

13. The transit center should be designed in a manner so that waiting passengers are not loitering directly in front of existing stores. This criteria has developed from a history of vandalism when earlier bus station locations at Serramonte Center caused some vandalism to occur at the Mervyn's store.

14. The minimum floor to ceiling height for retail stores at Serramonte Center is 10'. An additional two to three

feet is required between the ceiling and the roof for mechanical equipment.

The application of these criteria led to the conceptual transit center design shown on the following pages. As illustrated, the transit center provided direct access for SAMTRANS buses from Serramonte Boulevard at an access point that is located some distance from the vehicular entrances into Serramonte Center. In this scheme, transit vehicles have exclusive use of the transit center and are separated from private automobiles. The transit center structure is located some distance from the nearby Serramonte Center stores. This structure has been placed at a location where two levels can be developed (see cross-section) with SAMTRANS buses using the upper level, and with the lower level devoted to revenue-producing retail space (29,337 leasable sq. ft. have been provided). These lower level stores will provide convenient access to shoppers from the parking areas that are immediately adjacent to them at the north and east. A well-lit, covered and landscaped walkway leads shoppers from the sidewalk of Serramonte directly into the lower level of the transit center. Exhibits and retail displays could be located along this walkway which provides safe and well-lit access through the parking area. There, a generously wide and well-lit corridore takes passengers past retail store windows to a stairway leading up to the bus loading areas. An elevator located next to the stairway provides access to this upper level for the handicapped. Access to these waiting areas can also be achieved directly from the sidewalk adjoining Serramonte Boulevard, which is on the same level. Alternatively, ramps to the ground level and/or direct second level access into the Ward's store may be preferable as they would avoid some of the operating and maintenance costs involved, and potential crime and liability related to elevators.

At the upper level (boarding areas) of the transit center, seven berths have been provided for SAMTRANS buses - including one for the newer articulated bus -- plus layover

space for 5-6 buses. Passengers are protected from sun and rain while waiting, boarding or disembarking from buses by means of a roof canopy. In addition, two enclosed waiting areas protect passengers from the wind and cold. Benches are also provided for passenger convenience. Two structures located at either end of the platform area house the mechnical equipment (air conditioning, etc.) required by the stores below. The entire waiting area will be well-lit by means of lighting fixtures on the underside of the canopy. Maps and other information devices will be located throughout the waiting areas. The platform area itself will be raised four to six inches above the roadway level and will be finished in an attractive paving material to distinguish it from the roadway area. As indicated on the upper floor plan, landscape elements will be placed along the edges of the transit center to make it an attractive area for passengers and shoppers. The location of the transit center adjacent to Serramonte Boulevard will make police surveillance easier and help ensure security. In addition, closed circuit video cameras should be installed in the waiting areas and in the lower level entry corridor for security purposes.

It should be noted that some grading and other site improvements will be required in the parking area to the southeast of the Montgomery Wards store. This work will lower the grade level of the parking area approximately five feet to match the level of the other nearby parking areas at Serramonte Center and to provide adequate height for the retail stores below the transit center. Construction of the transit center will eliminate approximately 125 parking spaces from this area.

Other transit center designs that were discussed and presented included: (1) providing parking at the lower level instead of retail stores, (2) locating the transit center away from Serramonte Boulevard and close enough to Wards to provide a second level entrance directly into the second level of the Wards store, and (3) orienting the transit center in the north-south direction and locating it to the southeast of the Wards store.

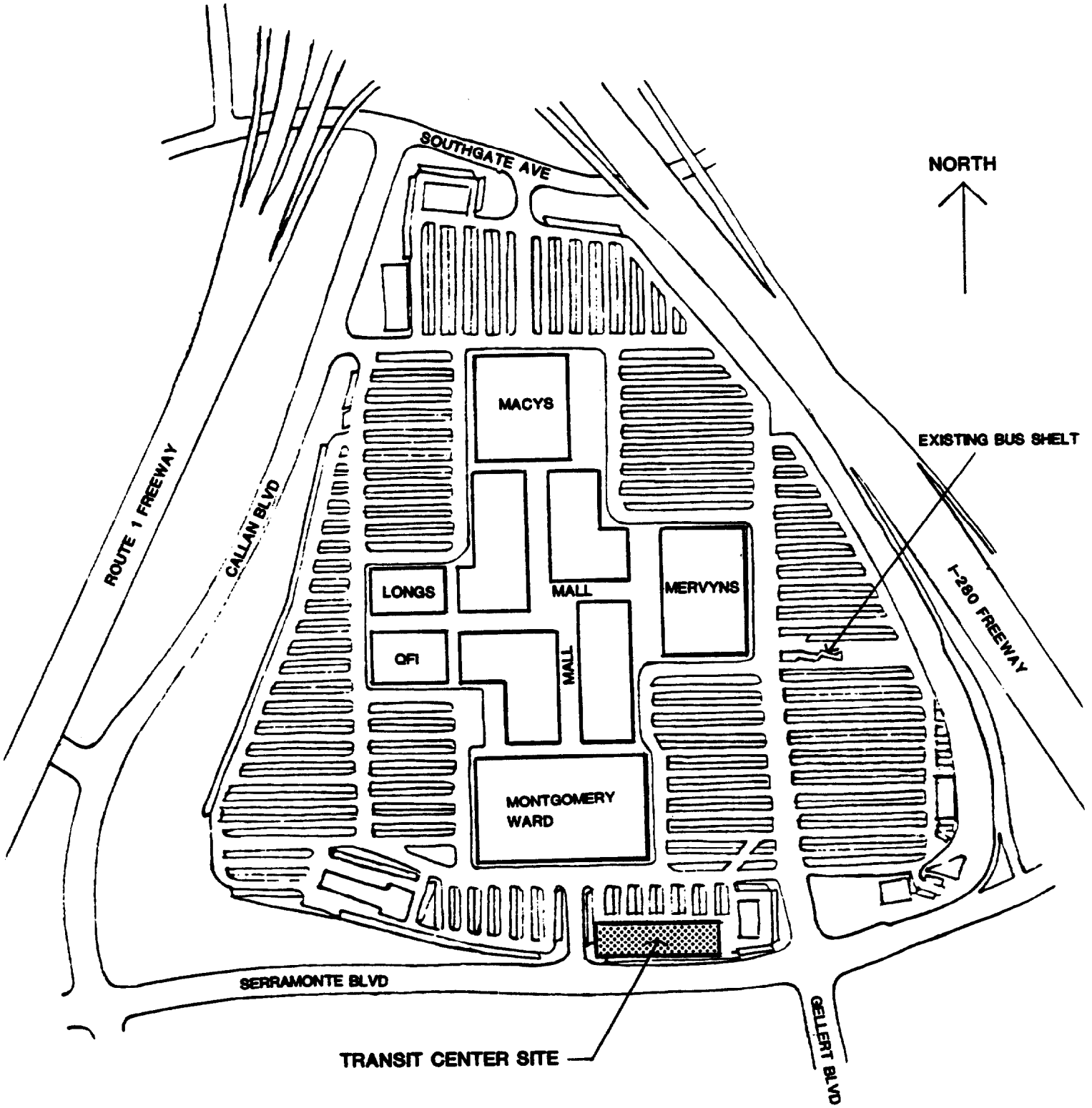


Figure 9-1 Transit Center Site Plan

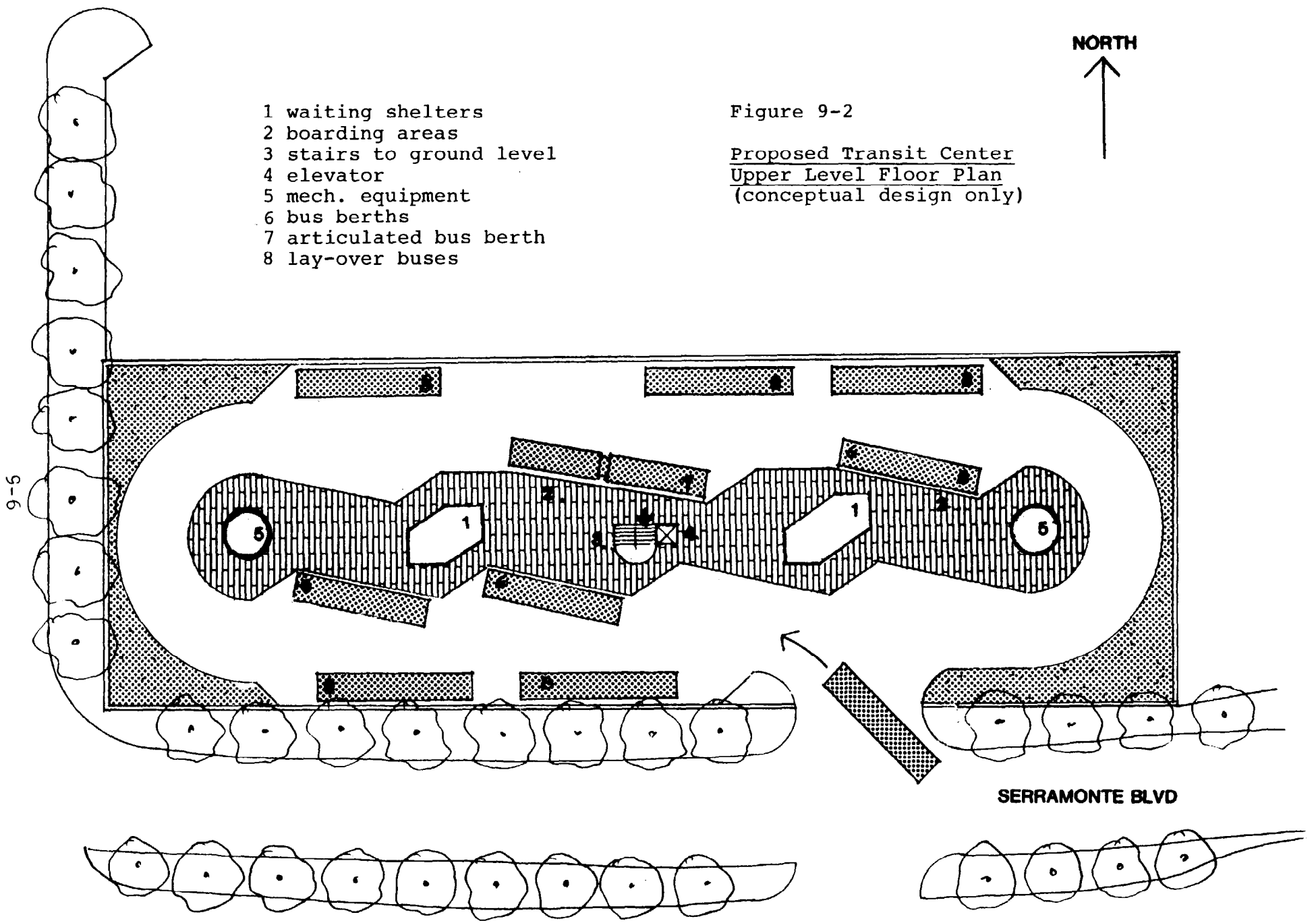


Figure 9-2

Proposed Transit Center
Upper Level Floor Plan
(conceptual design only)

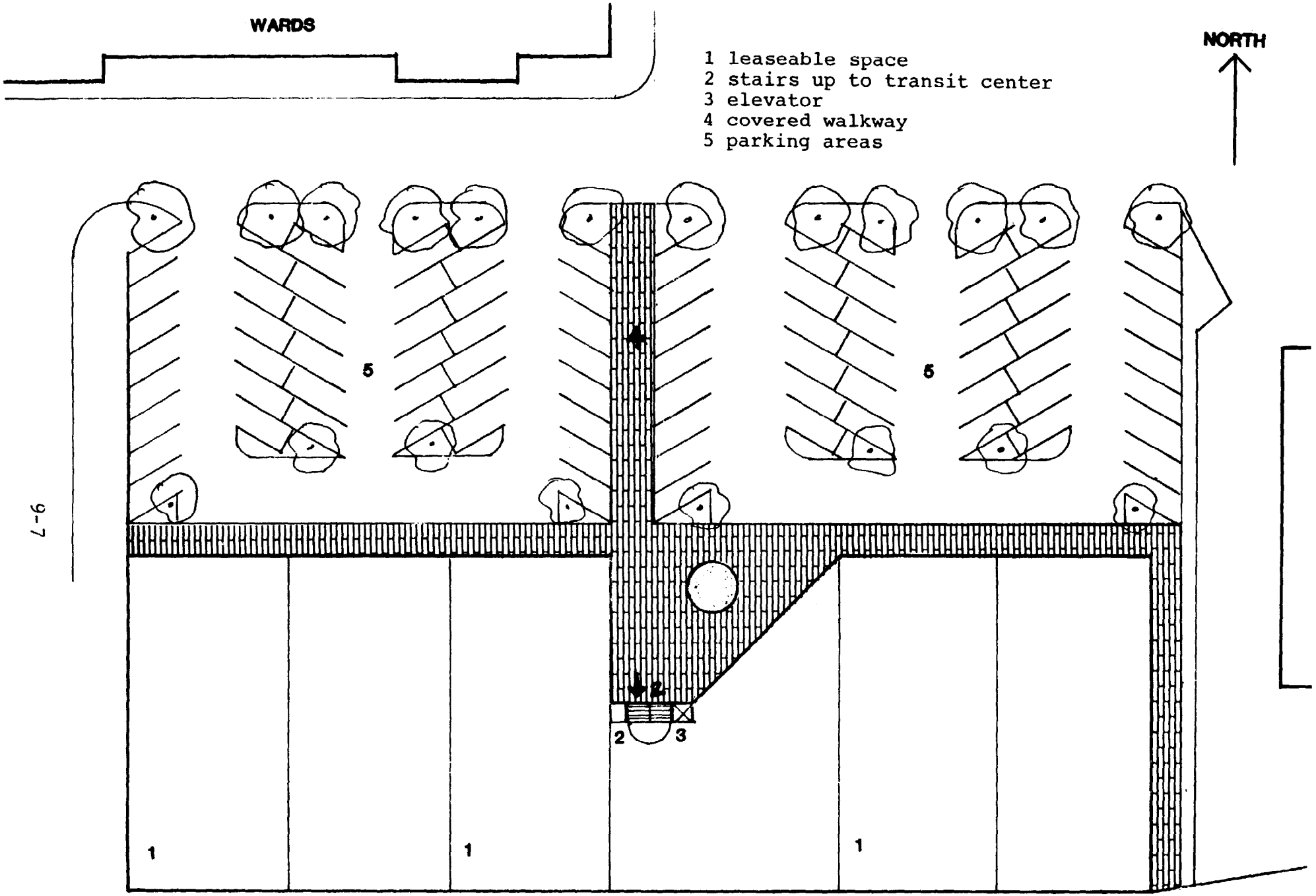


Figure 9-3 Proposed Transit Center - Lower Level Floor Plan (conceptual design only)

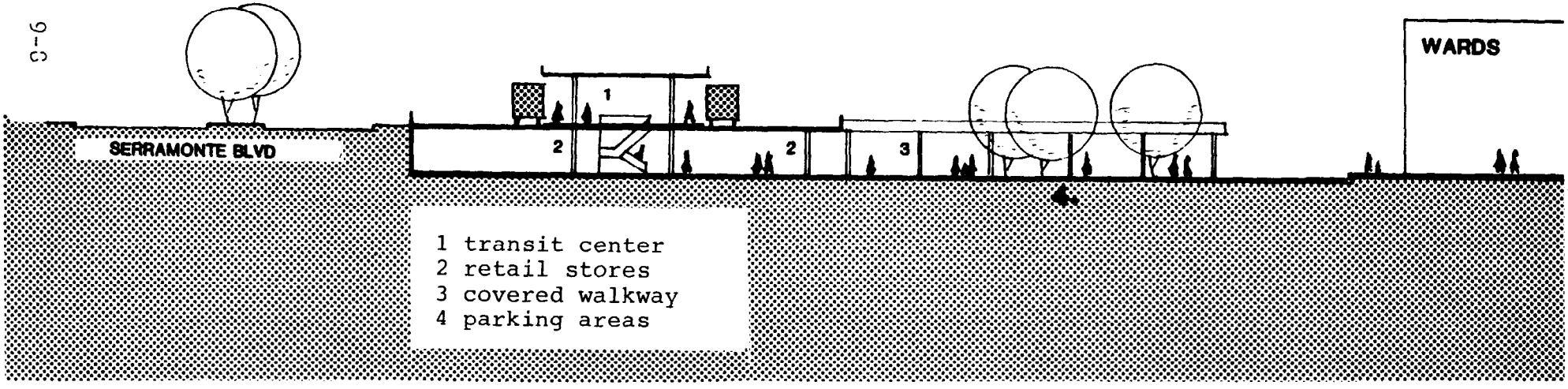


Figure 9-4 Cross-Section Through Proposed Transit Center

B. Implementation

Implementation of the transit center described above will require two interrelated activities: (1) planning and design, and (2) financing. Financing alternatives are discussed in the following section of this report. Planning and design of the transit center would proceed as follows:

1. Negotiation and agreement between SAMTRANS and Serramonte on financing mechanisms, cost sharing, implementation responsibilities, easements, liabilities, rights and obligations, operations, maintenance and related issues.

2. Identification of the key individual at SAMTRANS who will be responsible for this project and for all public agency involvement and funding, and the key individual at Serramonte Center who will have overall responsibility for this project in terms of the shopping center's activities and private financing.

3. The development of a detailed list of planning requirements jointly by SAMTRANS and Serramonte staff that will form the basis for the design of the transit center. This list of requirements should contain as much specificity and detail as possible (e.g. number of feet required in the bus turning radius, amount of leasible area required, ventilation requirements, precise length of bus stalls, etc.) to enable the transit center architects and engineers to best meet the needs of SAMTRANS and Serramonte Center. Consideration should be given to include some representative bus riders to help identify riders' needs in the transit center.

4. Commissioning architectural and engineering consultants to design the transit center. These consultants should be under contract with either SAMTRANS or Serramonte (depending on whether the majority of financing is from

public or private sources). The other party, not part of the contract with the consultants, should retain the right of approval for all planning and design decisions.

5. Development of a preliminary scheme and cost estimate by the consultants. In this important step of the implementation process, the architectural and engineering consultants will prepare a preliminary layout of the transit center and an initial estimate of the construction costs. The preliminary plans should be reviewed by SAMTRANS and Serramonte staff to ensure that their planning requirements are being met. The preliminary estimate should be used to confirm the project's budget estimates that were used in the financing arrangements. The project budget should include funds to pay these consultants and other administrative costs related to the project. The preliminary plans and estimates should be approved by the SAMTRANS board of directors and the Serramonte management for approval prior to authorization of the consultants to go on to the next steps. Serramonte management may wish to take the preliminary plans and estimates to the major tenants (department stores) for information and/or approval.

6. The preliminary plans should be presented to representatives of appropriate city and other public agencies who will be involved with planning and other approvals required for implementation.

7. If no problems have emerged during the above review process, or if they are minor, the consultants should be authorized to proceed with the development of contract documents for the construction of the transit center. If major problems have surfaced, requiring major revisions, the consultants should be directed to revise their plans and estimates

accordingly and to present them again for further review.

8. A detailed cost estimate should accompany the construction documents, and this cost estimate should be scrutinized prior to advertising the project for bids from contractors. The final construction documents should also be reviewed to ensure that they have incorporated the revisions that were recommended. The detailed cost estimates should also be used to confirm the project financing and revisions should be made if required to ensure that the financing meets project needs.

9. Following the traditional construction bidding process, a contractor should be selected based on (1) the bid price, and (2) the contractor's qualifications.

10. Given the availability of funds, the contract for construction of the transit center should be awarded by the SAMTRANS board of directors with the approval of the Serramonte owners.

C. Methods for Financing a Transit Facility

Funds to pay for a transit facility may be collected from either public or private sources. Public sources include the federal government, the State of California, the City of Daly City, or SamTrans itself. The most likely private source would be Serramonte Center.

Federal Government Sources

The majority of federal capital funds have historically been derived from two sections of the Urban Mass Transportation Act: Section 3 and Section 5. As of fiscal year (FY) 1984, however, Section 5 will be replaced by the new Section 9. Sections 3 and 9 are discussed here in turn.

Section 3 provides discretionary funds for up to 80 percent of property acquisition, construction and modernizing of transit facilities and equipment, and other capital expenditures. With enactment of the Public Transportation Act of 1982, however, the level of federal participation under Section 3 is reduced to 75 percent.

Section 9 funds have historically been available for transit technical studies and demonstration projects. As revised by the Federal Transportation Act of 1982, Section 9 will be a block grant program devoted primarily to capital expenditures, with two-thirds of the funds (in areas with population greater than 200,000) allocated based on bus service and one-third allocated based on rail service.

To receive funds through either Section 3 or Section 9, a project must be included in the local and state Transportation Improvement Program (TIP's). Inclusion in these programs requires the demonstration of need for the capital facility and the assignment of a priority, relative to other candidate facilities or other capital improvements, to the project. In addition to being included in the TIP's, a project must have a commitment for the non-federal share of funding. The non-federal share may be derived from funds from other governments (i.e., state and local sources) or from private sources.

State Funding Sources

The primary potential source of state funds for a transit facility is AB 1335, which replaced SB 620 during the past year. SB 620 provided sales tax revenues for transit operating or capital expenses, with funds disbursed to counties based on a population/population density formula. AB 1335 disburses 30 percent of funds directly to transit operators, such as SamTrans, and the remaining 70 percent to the region. The Metropolitan Transportation Commission (MTC), which is the regional recipient in the Bay Area, reserves its allocation for capital expenditures.

To be awarded state funds, a project must - as for federal funds - be included in the TIP.

Local Sources of Funds

Local public sources of funds may come from a city, a transit operator or from a special district. The first two sources are, in the early 1980's, more theoretical

than real, as chronic shortages of funds for both municipalities and transit operators have severely limited their abilities to pay for non-essential improvements or facilities. One local possibility, though, is the issuance of revenue bonds, to be repaid by an allocation of revenues generated by the improvements paid for by the bond (i.e., increased sales tax revenues).

Special districts have increasingly been used to generate funds for specific projects that will create special benefits to identifiable users or landowners. Special assessment districts, for example, may be created where a particular improvement will provide a special benefit. The creation of a district allows for the issuance of bonds, at a favorable interest rate, that will be repaid by assessments against the property that is benefited. A special assessment district may be created by a city, and requires the assent (or, more specifically, non-protest) of the owners of at least 60 percent of the property area that would be included in the district.

Revenues from special assessment district bonds could be used for 100 percent of the capital cost of a transit facility.

Private Sources of Funds

Funds for a transit facility could be contributed directly by Serramonte Center itself. This arrangement would presumably be feasible for the center if the center's additional revenue from the facility - i.e., from rentals of space in the facility or added sales to new transit riders - exceeded its costs in providing the facility.

The ability of retail space to generate revenue was tested by comparing the rent level required to cover the construction cost of the retail space component to the amount estimated to be obtainable for such space. Required rents were estimated for all four alternative designs under two financing arrangements: (1) private long-term financing, assuming a 25-year loan at 14 percent interest, and (2) public funding - e.g., from a revenue bond or special assessment bond - assuming a 30-year loan at 12 percent interest.

Table 9-1 presents the estimated cost per gross square foot to construct the retail space that would comprise the ground floor of a transit station. This cost includes the extra structural requirements required to support buses. As shown in Table 9-2, the required rents with private financing ranged from $16.60 per net rentable square foot per year, for the design with a 15-foot-wide corridor, to $23.42 per square foot per year, for the design with a corridor that widens at a 45 degree angle from the central stairway to the edge of the facility. With public financing, required rents would range from $14.16 per net rentable square foot per year for the former design to $19.98 per square foot for the latter. The amount of rent required for each alternative depends on the ratio of net rentable square feet to gross square feet in the structure; thus, the wider the corridor, the greater the rent required. Note that the indicated rents must be net of operating costs and would cover only debt service (that is, they would yield no return to the center).

TABLE 9-1

Calculated Construction Cost for
Retail Space in a Transit Facility

	Allocated to Private Sector (Serramonte)	Allocated to Public Sector[1] (SamTrans)	Total
Construction Cost			
Retail space (42,000 g.s.f.[2] @ $60)	2,520,000	0	2,520,000
Support for buses (42,000 g.s.f. @ $15)	0	630,000	630,000
	2,520,000	630,000	3,150,000
Architects, Engineers, Legal, Permits, etc. (15% of construction)	378,000	94,500	472,500
	2,898,000	724,500	3,622,500
Financing			
Points (1.5)[3]	44,130	0	44,130
Interest (12 months, 14% for private, 12% for public)	205,950	43,470	249,420
TOTAL	3,148,080	767,970	3,916,050
TOTAL PER GROSS SQUARE FOOT	74.95	18.29	93.24

[1]Financing assumed to be obtained from any of the public sources identified above.
[2]Gross square foot.
[3]Private sector only.

Sources: William Liskamm; Gruen Gruen + Associates.

TABLE 9-2

Rents Required to Cover Private Construction Costs for a Transit Facility

Alternative Design	Private Financing	Public Financing
1. Corridor widens on both sides (24,327 net leasable square feet)	$23.42	$19.98
2. Corridor widens on one side (29,327 net leasable square feet)	19.43	16.56
3. 20-foot-wide corridor (33,727 net leasable square feet)	16.89	14.41
4. 15-foot-wide corridor (34,327 net leasable square feet)	16.60	14.16

Source: Gruen Gruen + Associates

What types of tenancies could be expected to pay rents of over $14.16 per square foot per year (the minimum for a publicly-financed station with a narrow central corridor), over $16.60 per year (the minimum for the same facility, privately financed) or over $23.42 per year (the amount required for the design with the widening corridor, privately financed)? A review of Urban Land Institute's Dollars and Cents of Shopping Centers reveals that the median rents in regional shopping centers throughout the country for some types of stores do exceed these figures. Table 9-3 presents the types of tenancies that would be appropriate for a transit facility and the national median rents these tenancies pay for mall locations.[1] Rents paid by the top 10 percent of these stores are also shown. The table indicates that a few of the median rents and many of the top 10 percent rents exceed the amount needed to support any of the transit facility designs. In evaluating these rents, it may be noted that rents at Serramonte have historically been higher than national averages. Nevertheless, the Center's ability to attract tenants that could pay the required rents to a transit facility location would have to be evaluated specifically before a final decision on the feasibility of private financing could be reached.

1. These are rents for mall locations. Rents for the transit center stores would probably be somewhat less due to its perimeter location.

TABLE 9-3

Median and Top Ten Percent Rents
Paid by Selected Mall Stores in
U.S. Regional Shopping Centers, 1981

Type of Store	Median Rent per Sq. Ft.	Top 10% Rent per Sq. Ft.
Delicatessen	$ 9.07	$ 29.14
Bakery	10.86	19.65
Candy and nuts	19.10	39.18
Dairy products	10.99	15.24
Health food	11.92	19.69
Fast food/carry out	15.94	46.86
Doughnut shop	15.44	22.95
Ice cream parlor	12.46	31.40
Cookie shop	25.64	62.93
Hosiery	17.44	29.97
Jeans	11.25	20.20
Records/tapes	11.57	18.34
Cards and gifts	9.88	17.27
Candles	12.15	22.32
Books and stationery	9.65	14.38
Liquor and wine	7.05	11.84
Wine and cheese	9.45	10.97
Tobacco	17.89	34.38
Flowers	12.07	56.66
Plants	11.81	35.72
Telephones	10.52	14.61
Beauty parlor	9.35	18.69

Table 9-3
(Continued)

Type of Store	Median Rent per Sq. Ft.	Top 10% Rent per Sq. Ft.
Barber shop	8.43	14.33
Shoe repair	8.20	11.37
Cleaner and dyer	6.69	11.59
Travel agent	11.76	24.96
Key shop	44.03	115.55
Amusement arcade	11.50	18.33
Bank	7.81	20.84
Savings and Loan	9.13	24.69
Insurance	5.93	9.99
Real Estate	8.08	15.17

Source: Urban Land Institute, Dollars and Cents of Shopping Centers: 1981 (pp 80-113)

10. ENVIRONMENTAL ASSESSMENT

ENVIRONMENTAL ASSESSMENT

Since this study will not result in a specific plan for construction of a transit facility, it was determined that it would not be appropriate to develop an environmental assessment of the project at this time. Instead, the following topics are listed as those that should be considered in an Environmental Assessment discussion when a proposal is presented for implementation.

1. Compatibility with existing zoning and plans.
2. Land Use
3. Visual Quality
4. Population
5. Transportation/Circulation
6. Noise
7. Air Quality/Climate
8. Utilities/Public Services
9. Biology
10. Geology/Topography
11. Water
12. Energy/Natural Resources
13. Hazards
14. Cultural
15. Alternatives
16. Mitigation Measures

11. CLOSING DISCUSSION
TRANSFERABILITY TO OTHER CENTERS

A. OTHER IDEAS ON TRANSIT POTENTIALS

Because of time and budget limitations on this study, only a few, selected issues (employee transit use, bus stop location, and station design) could be included in the analyses. Other issues relating to transit service and shopping centers were partially considered and discussed during the course of the work. Those issues were worthy of analysis, but could not be pursued further in this study. Some of those thoughts and ideas are mentioned below as part of this closing discussion in the hope that they may be of use to others in future studies.

These thoughts and ideas have to do primarily with transit potentials, including potentials for increasing transit use, potential benefits that would result from increased transit use, potential advantages of joint participation in providing transit services, and potential transit service improvements that could help to increase transit use.

Potential Benefits

There are two basic types of benefit to a shopping center that could result from increased transit service and increased transit patronage. One is an increased market for

retail sales (more shoppers with convenient access to the center), and the other is a reduced parking requirement (fewer parking spaces needed for a given retail floor area).

A greater share of the transit market may be captured where transit service: (1) provides frequent service, (2) is close to passengers' homes, and (3) minimizes the duration of the trip. For example, the bus lines that now serve Serramonte Center cover only a portion of the Center's primary market area. Furthermore, the bus routes are circuitous and relatively slow compared to travel by automobile. Transit service could be increased by providing routes that are more direct, new routes connecting the shopping center to other parts of the primary market area, and additional routes extending into new market areas where the distances are reasonable. In the case study, the transit agency made it clear that increased service would have to be provided by existing equipment and personnel.

The increased service could bring new transit dependent shoppers to the center, and, depending on the design and operation of the service, could attract some shoppers and employees to use trasnit instead of driving, which would make it possible to accommodate more retail floor area with fewer parking spaces.

To the transit agency, the most likely benefit of increased service would be increased patronage during off-peak periods, which could bring in more fare-box revenue with the same equipment and personnel that is already available.

There are also potential benefits to both the shopping center and the transit agency that could be derived from joint promotional programs. Advertising on buses could help to promote the shopping center. Availability of bus

information and the signing and attractive treatment of pedestrian access to buses by the shopping center could help to promote the use of the transit service.

Joint funding arrangements for transit improvements could also prove beneficial to both parties, by reducing costs to the transit agency, and by the possibility of reduced interest on borrowed capital improvement funds and other public assistance to the shopping center.

Potential Service Improvements

The possibility of additional and more direct bus routes for shoppers, in off-peak periods, have been mentioned above. Service increases over existing levels would attract more riders to Serramonte. Other improvements that would help to attract both transit dependent and non-dependent users to transit would be improvements to increase understanding and awareness of available services, particularly routes and schedules.

Some bus route maps (especially those on timetables) are abstract and difficult to read. Clear and attractive route maps, with more information of interest on them, could encourage new riders to try the service. The maps could be made attractive enough for even nonusers to want them and keep them, which could cause the nonuser, at some appropriate time, to decide to actually use the service. This would be a method of promoting the service while providing the necessary information about it.

Other possible service improvements involve connections to trunk line transit services and provisions for parking. Both subjects are mentioned later in this discussion.

Criteria Based on Potential Transit Use

In this study, the transit agency and the shopping center chose a bus stop location for the primary purpose of improving bus operations and reducing the impact of buses on traffic circulation and maintenance costs within the center's parking lot. Although walking distances and the proximity of the bus station to the center of retail activity were discussed, convenience to bus patrons did not weigh heavily in the decision on the best location for the bus stop.

There are several reasons why, at this particular center, convenience to bus patrons was not the primary criterion. Ridership to the center, though significant, represents a relatively minor percentage of total shoppers. Transit service to Serramonte Center has been in operation long enough to become an established tradition and may tend to be taken for granted. It is likely that neither the Center nor the Agency consider that there might be much potential for a substantial patronage increase in the near future.

At a center where transit patronage is more significant, or where the potential for increasing the patronage appears to be high, convenience to bus patrons could become the

principal criterion for bus station location and design. It might be reasonable, therefore, to establish two (or more) sets of criteria. One set would be more heavily weighted toward convenience to bus patrons, the other more heavily toward efficiency of buses and reduction of costs. The first set would apply where transit patronage is expected to make a substantial contribution, and the second where transit's role is not expected to have more than minor significance.

Reduced Parking Requirements

One of the major potential benefits of transit to a shopping center is the possible reduction of parking space requirements. Although actual ratios of parking space utilization tend to vary significantly from one center to another, a widely accepted rule of thumb calls for 5.0 parking spaces for each 1,000 square feet of gross leasable floor area in a shopping center the size of Serramonte Center. The bus stop location analysis presented earlier in this report indicated the increase in floor area at Serramonte Center that could be achieved by a reduction of the required parking index to 4.5 spaces per 1,000 square feet. The reduction would be sufficient to permit adding the equivalent of a very large department store and other shops, without increasing the number of parking spaces.

If public transit could carry a sufficient number of shoppers to reduce the number of parking spaces required in the peak shopping period, a shopping center could expand

its retail floor area without the expense of adding more parking spaces. If the reduced parking requirement were sufficient to eliminate the building of an expensive parking structure, the saving in cost could be the difference that would make an expansion program for the center feasible.

In order to use increased transit patronage as the basis for reducing the parking requirements, it would be necessary to prove the effectiveness of transit, possibly by a demonstration and survey. The results would be needed to persuade the major tenants to agree to a reduced parking index. Leases with major stores usually require the shopping center to provide a specific number of parking spaces for each store. Negotiation of changes in the leases before they expire can be difficult and complicated, involving many different parties and different interests. Therefore, it could take a major expenditure in time and effort to actually achieve the reduction in parking space requirements.

The value of a parking space is sometimes used to support arguments for retaining a maximum number of parking spaces regardless of other considerations. The value of a parking space at a shopping center, in terms of sales attributable to that space, varies widely depending on where the space is located in the parking lot. Assigning an overall average value in annual sales volume to all the parking spaces is meaningless for most practical purposes.

Spaces used by employees in the peak shopping days should be located near the outer edge of the parking lot, where the turnover and use of spaces by shoppers is the lowest. During normal, non-peak shopping periods, these spaces would not be used at all by shoppers. In the busier shopping seasons, they might be used once on a heavier day, but probably would not be occupied except on the few busiest peak days of the pre-Christmas shopping period, when each of these spaces could be used two, three or four times in one day.

The annual use of a perimeter parking space left open for shoppers because an employee used transit instead of driving to work would be on the order of a daily turnover of four times per day on about five peak days, or a total of about 20 uses for shopper parking.

The most heavily used spaces in the parking lot are closest to the stores and shops. Those spaces would be used constantly and would probably be occupied at all times during the shopping hours in all seasons throughout the year. One of those close-in spaces could have an average turnover of about 10 per day on normal days and somewhat less on peak days (because of longer shopping visits) for a total of about 3,600 uses during a year.

The 20 uses of a perimeter space would occur on the peak shopping days and could each produce 10 or 12 times the average sales value of a shopping trip at other times of the year. Using a relative weight of 12 sales units, and

multiplying it times 20 turnovers, gives a shopping value production for the perimeter parking space of 240 relative sales units for a year.

For comparison, the heavily-used, close-in space, similarly weighted for the higher value of each turnover in the peak and busy shopping periods, could have a value of about 7,500 relative sales units for the year. Therefore, the close-in space would produce more than 30 times as much sales volume as the perimeter space.

That number (30) cannot be used directly to compare the relative value of attracting employees or shoppers to transit, because all the shoppers who use cars do not park in the close-in spaces. Using average turnover rates for the entire parking lot, and appropriate relative sales values per turnover by type of shopping period, the total yearly value of an average parking space would be about 2,900 relative sales units, or about 12 times the value of a perimeter space that would have been used by an employee.

The comparison suggests that it would be necessary for 12 employees to use transit instead of their cars, in the peak shopping period, in order to produce the equivalent sales volume from the parking lot as produced by attracting one shopping customer to use transit on a regular, year-round basis.

The purpose of this discussion is not to discount the value of a program to attract more employees to the transit service, or to indicate that the perimeter parking spaces

have little value. The purpose is to demonstrate that there are various ways of comparing and evaluating the potential benefits of different kinds of transit improvements, that the factors involved are many, that their relationships can be complex, and that comparisons should be made carefully by analyzing in detail all of the significant features of specific and complex alternative plans. Furthermore, surveys are needed of shopper characteristics, parking and transit use, and their relationships to sales volumes.

Park-and-Ride Potential

Based on the case study, it would appear that the largest group of potential transit users is the group of shoppers who now travel to shopping centers by automobile. However, it could be difficult to attract a significant number from that group to actually use transit instead of driving. Two major deterrents that would have to be overcome are the general acceptance of the belief that the transit market is limited to transit dependents and some commuters, and a lack of familiarity with, or interest in, transit by those who are able to use automobiles.

The interest in establishing an authorized park-and-ride program at Serramonte Center and the Center's reasons for avoiding it are presented earlier in this report. If solutions could be found for the problems that cause the Center's objections, park-and-ride could serve as a method of acquainting more of the center's shoppers with transit.

This could be accomplished by exposing park-ride commuters to transit with the likelihood that some would eventually use transit for local shopping trips too. The commuter market for park-ride is already recognized and accepted by SAMTRANS. An example of how this method could be applied (using our case study) follows:

There is a possibility that a BART tail track may be extended south from the Daly City station to a point near the Serramonte Center. Transfers may be made at that point from SAMTRANS buses. Park-and-ride commuters could be shuttled quickly from Serramonte Center over the short distance to the BART tail track. A round trip by shuttle bus could probably be made in very few minutes, so the service could be frequent and relatively inexpensive to run. The service would provide an attractive introduction to transit for those who now use automobiles.

The shuttle connection could bring shoppers and employees from San Francisco to Serramonte Center, and would provide a quick and direct connection to trunk lines of the SAMTRANS system that do not stop at Serramonte Center but would go direct to the transfer point with BART. The shuttle would also travel to and from the bus station at Serramonte Center where passengers could transfer to the shuttle from other local bus lines. It is likely that some commuters could be introduced to transit through the park-and-ride program and could eventually be attracted to use local buses instead of driving to the center. This would help to establish patterns of transit use to the center that could then be used by shoppers, assuming there could be some adjustment of routes in order to serve the residential areas where those shoppers and commuters live.

B. Principles For Planning, Location and Design

Planning

Based on the experience of the case study, it would appear that, in order to have any hope for success, planning for transit centers at new or renovated shopping centers should recognize the following:

1. Coordinated planning with shopping center developers must begin at the earliest moment when plans for the center are being developed.
2. Transit agency staffs must assume an advocacy role for transit and seek out developers for early planning purposes rather than responding to shopping center plans that have been finalized and approved by all concerned.
3. Transit agencies must develop clear policies for staff to implement in relation to: (1) providing service to shopping centers, and (2) whether they will provide service on private property.
4. Transit agencies must develop communication/education mechanisms to inform developers about the mutual benefits available through coordinated transit service. Benefits to developers may include new leaseable areas, elimination or reduction of road maintenance costs due to bus impacts, additional parking resources, and potentials to reduce parking ratios required by municipalities and/or major tenants, thereby achieving significant square foot savings in parking lots. Benefits to transit agencies may include improved headways, elimination or reduction of congestion with private autos, improved safety, and improved operating efficiencies.
5. Transit agencies must seek an active role in general land use planning within their service areas. This activity can increase ridership by developing mechanisms to reduce local traffic volumes and congestion, linking future activity centers, and attracting more of the "choice" market to transit use.

6. Transit agencies must identify a key staff person who will be responsible for public/private coordination, and to whom all requests for planning assistance will be directed. Ideally, this person would have have both transportation and general urban planning expertise.
7. Transit planning in relation to shopping centers must recognize that, while transit agencies are ever mindful of their fare-box economics and generally seek ways to increase revenues and ridership while reducing costs through greater efficiencies, shopping center developers must respond to a different set of forces. These forces, which play the dominant role in planning decisionmaking at shopping centers, are the leases and other legal arrangements that the developers have with their major department store tenants. These leases stipulate the parking provisions that will be made to the customers of the major tenants, and may include access provisions, proximity,"interference" of transit vehicles and related details. Where transit facilities can be incorporated into these leases at the outset,opportunities exist for joint planning and development of transit facilities into the shopping center. However, where developers attempt to include transit facilities at a later point (perhaps due to the requirements of an EIR process or the local government's requirements), many difficulties arise. These difficulties center on the need to renegotiate the leases with the major tenants to deal with transit issues. Most developers would be very reluctant to reopen this area of negotiation for these are the prime leases of the entire shopping center developemnt, and revisions to these instruments could cause serious delay or abandonment of the project. Developers and transit agencies might both profit from joint efforts at communication/education with major tenants to help them understand transit's benefits.

Location

In general, principles for the location of a transit center in a shopping center should include the following:

1. Ideally, the transit center should be as close to the center of shopping activity as possible without creating on-site traffic congestion. Exclusive busways that take buses to the heart of shopping malls without interfering with shoppers or other vehicles have been built for this purpose (Eaton Center, Toronto). This approach to transit service appears easier to implement in new centers than it does in existing or renovated centers. However, several older shopping centers throughout the nation are considering major expansion programs which might permit consideration of exclusive busways.
2. Shopping center managers seem to seek locations for transit centers that:
    - A. Eliminate conflicts between buses and private autos within the shopping center site.
    - B. Eliminate or reduce the cost of repairing interior circulation roads damaged by buses.
    - C. Keep passengers waiting for buses away from storefronts thereby reducung vandalism.
    - D. Provide the greatest potential benefits (e.g. increased rental revenues, increased parking, reduced costs, etc.).
    - E. Keep options open for future expansion programs.
    - F. Do not block visual exposure of existing stores.
    - G. Do not require renegotiating leases with major tenants.

3. In general, transit staff members seek locations that:
   A. Simplify and speed up bus operations.
   B. Reduce travel time and distance.
   C. Avoid traffic conflicts that accompany service nearer the center of shopping activity when buses and autos use the same roads.
   D. Provide exclusive bus routes and areas.
   E. Provide sufficient bus loading positions and layover space for current and future needs.
   F. Offer simple and direct routing.
   G. Provide for driver "breaks" (e.g. coffee shops, rest rooms, etc.).

Design

Design principles that emerged from the case study, and that may be useful at other centers, include:

1. Bus access points into the transit center should be located away from automobile entrances into the shopping center, and should be exclusively for buses.
2. Bus routes to, from and within the transit center must meet all operational criteria (e.g. turning radii, ramp slopes, etc.).
3. Adequate space must be provided for bus berths and for layover buses to meet current and future requirements. Provision must be made for new transit vehicles such as the longer articulated buses.
4. Waiting passengers must be protected from the elements, and should be provided with safe and secure waiting areas, with good visibility of on-coming buses, good lighting and opportunities to sit and rest.

5. Transit route and system maps, together with local street maps should be provided for orientation purposes.
6. Full access must be provided for handicapped passengers and for the elderly.
7. Sufficient boarding area space should be provided so that boarding and disembarking passengers do not crowd each other and those waiting.
8. Ancillary facilities such as telephones, vending machines and trash receptacles are convenient and help maintain cleanliness.
9. An attractive pedestrian connection is required between the transit center and the shopping mall itself. This connection should be covered and can include retail displays, exhibits and stores. It is essential that this link to the shopping mall be as pleasant and convenient as possible, and that every effort be made to ensure its users' safety and protection.
10. Design of the transit center should include, to the extent possible, revenue producing opportunities for the shopping center management such as retail stores, kiosks, etc. so that these benefits will help offset the cost of the bus facility.
11. Design of the transit center structure should address existing sight lines to the shopping center stores, and its appearance should be compatible with the adjoining buildings of the shopping center.
12. In a two story transit center, such as the one used in the case study, designers must recognize the need for mechanical space between the store ceiling and the structure supporting the buses, and for mechanical equipment that is normally located on the roof of the stores. At Serramonte the space required between ceiling and roof was 2-3 feet.

C. Financing

The options for financing a transit center include the use of federal, state and local public money as well as private funds. Federal funds, available under Sections 3 and 9 of the Urban Mass Transportation Act, require local matching funds to cover at least 25 percent of the project cost; these matching funds may, however, be allocated from state monies. State funds may be available under the provisions of AB 1335. Both federal and state funding require that a proposed project be included in the Transportation Improvement Program (TIP), which means that it must compete with other transit equipment and facilities projects for funding priority.

The most likely local sources of funds are special assessment district bonds and revenue bonds. Either of these two sources would involve the issuance of bonds by the city in which the facility is located, with the former to be paid back by assessments on the shopping center property and the latter by the revenues generated by the facility (i.e., added sales tax revenues).

Private funding may be a feasible option if the retail space incorporated into the design of a transit center or if expected increases in ridership reduced the

required parking space:building space ratio at the shopping center. If the shopping center is able to command relatively high rents, the rents from the additional space could cover or exceed the debt service on the portion of the facility to be paid for with private funds.

12. ACKNOWLEDGMENTS

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BIBLIOGRAPHY

City of White Plains, New York Transportation Center
Preliminary Design Study
Howard Needles Tammen and Bergendoff, 1981

Downtown Transit Center
City of Wausau, Wisconsin
Marathon County Planning Commission, November 1977

Performance Criteria and Design Standards for Metro Flyer Stops
Metro, Municipality of Metroplitan Seattle, 1974

Transit Passenger Shelters
Frank Ehrenthal, 1973

"Transportation Research Record"
NO. 625-1977

Prototype Transit Station Design
School of Architecture and Urban Planning
University of California at Los Angeles, 1975

Joint Development
Making the Real Estate - Transit Connection
Urban Land Institute, 1979

Increasing Transit's share of the Regional Shopping Center
Travel Market: An Investigation
Departments of Civil Engineering and Urban Planning
University of Washington, 1979

14. APPENDICES

EMPLOYEE SURVEY

A. SURVEY PURPOSE

In December 1980 and January 1981, Gruen Gruen + Associates (GG+A) conducted a marketing study for the Serramonte Shopping Center. One of the survey results was that workers at the Center were more than twice as likely to ride the bus to and from the Center than were shoppers. About six percent of the former and 16.5 percent of the latter indicated they routinely took the bus to Serramonte.

Because the worker data in this 1980-81 survey were based on a total of only 61 responses, it was decided that a resurveying of all workers at the Serramonte Center would be desirable. While 16.5 percent of workers who commute to work by bus is far from a majority of all workers, it is nonetheless significant in terms of the number of parking spaces that are freed up for shopper use - particularly when viewed in terms of the number of short-term shoppers that could park in spaces now occupied by the longer term employee parkers. The greater proclivity of the workers to ride the bus suggests that additional knowledge concerning the workers' ridership patterns might successfully be used to encourage increased transit ridership among those persons employed at Serramonte. SamTrans served as the sponsor for this study. The Serramonte Shopping Center contributed staff time.

B. SURVEY ADMINISTRATION

A collaboration between SamTrans and GG+A staff was responsible for the construction of the survey questionnaire. A copy of the questionnaire has been appended to this report. The questionnaire was distributed to the mall tenancies by Serramonte Shopping Center management in November 1982. Every worker was to have received a questionnaire. Four of the five major tenancies (Macy's, Mervyns, Longs and GFI) refused to participate in the survey. We do not know how many questionnaires were distributed to those tenants who agreed to participate nor can we say how the questionnaires were internally distributed. Two hundred sixty-nine questionnaires were returned. It is interesting to note that the responses of these 269 workers did not differ from the earlier survey in respect to the key question or the proportion of bus ridership. Sixteen-and-a-half percent of the present respondents indicated that they routinely take the bus to and from the Serramonte Shopping Center.

Table 5-1 presents the number of respondent workers by the store in which they are employed. Eighteen percent of the returned responses were from Montgomery Ward employees. Nine percent were completed by Contempo Casuals and three percent by the Mekong Restaurant and Serramonte Music Center workers. None of the remaining tenant participants provided more than 2.6 percent of the returned responses.

TABLE 5-1

The Number of Respondents by the Store in Which They Are Employed

Name of Tenant	Number	Percent
Albert's Hosiery	1	0.4
Bank	5	1.9
Brass & Leather	4	1.5
Bresler's Ice Cream	5	1.9
Carlin's Bootery	6	2.2
Carousel Snack Bar	7	2.6
Center Printing	3	1.1
Clothes Barn	5	1.9
Coat Closet	3	1.1
Contempo Casuals	25	9.3
Craft Showcase	2	0.7
Doumitt Shoes	5	1.9
Down Home Craft Show	6	2.2
Elegant Pantry	3	1.1
Ethan Allen Travel	6	2.2
Fairytales	4	1.5
Family Jewels	6	2.2
Florsheim Shoes	2	0.7
Gallenkamp's	4	1.5
Gap	3	1.1
Grodins	1	0.4
House of Fabrics	6	2.2
Hunt Donuts	5	1.9
Hygeia Health Foods	4	1.5
Kinney's Shoes	5	1.9
Leed's Shoes	1	0.4
The Limited	1	0.4
Main Line Gifts	2	0.7
Male Box	3	1.1
Mekong Restaurant	8	3.0
Montgomery Ward	49	18.3
Morrow's Nut House	2	0.7
National Shirt Shop	2	0.7
O'Neill's Cards	2	0.7
Optometrist	5	1.9
Persian Bazaar	1	0.4
Ringmaker	4	1.5
Roast House	4	1.5

Table 5-1, continued

Name of Tenant	Number	Percent
Self Image	2	0.7
Serramonte Music Center	8	3.0
Serramonte Shoe Repair	2	0.7
Sports Store	3	1.1
Sunglass Place	2	0.7
Tannery West	5	1.9
Taylor's Shoes	6	2.2
Temporary Tot Tending	4	1.5
Things Remembered	4	1.5
Tuloni Fambioni	6	2.2
Wilson's House of Suede	4	1.5
Winning Athlete	4	1.5
Women's World	6	2.2
Serramonte Center Management	1	0.4
TOTAL	268	100.0

Source: Gruen Gruen + Associates

C. CHARACTERISTICS OF THE WORKER RESPONDENTS

One-third of the sample respondents were male (33 percent) and two-thirds female (67 percent). The average (mean) age of the worker respondent was 27 years while the median, or that point at which half of the sample fell above and half below, was 22 years. Table 5-2 presents the occupational positions of the worker respondents. Over half (55 percent) of the worker survey participants were sales personnel or clerks, 17 percent served in a managerial capacity and 9 percent were food/service workers. The remaining 19 percent performed a variety of functions at the Center.

The before-tax 1981 household income of the worker respondents is shown in Table 5-3. Thirty-nine percent of the respondents reported before-tax incomes of under $10,000. Sixteen percent indicated incomes of between $10,000 and $15,000 and 19 percent between $15,000 and $25,000. The remaining 25 percent had household incomes above $25,000 in 1981. It is likely that a large proportion of the under-$10,000 households are one-person households or households of unrelated adults, given the age breakdown of the worker sample. Forty percent of those who returned this questionnaire did not specify their 1981 household income category.

The respondent worker's place of residence is shown in Table 5-4. Approximately 37 percent of the sample resided in Daly City, 23 percent in San Francisco, 11

TABLE 5-2

The Occupation Positions of the Worker Respondents

Occupation Position	Number	Percent
Owner	6	2.4
Manager	43	17.1
Buyer	2	0.8
Salesperson/clerk	138	55.0
Stockperson	2	0.8
Kitchen worker	4	1.6
Other food service worker	23	9.2
Clerical/bookkeeper	9	3.6
Personnel	3	1.2
Other	21	8.4
TOTAL*	251	100.0

*18 respondents did not answer this question.

Source: Gruen Gruen + Associates

TABLE 5-3

Total Before-tax 1981 Household Income of Worker Sample

Income Categories	Number	Percent
Under $10,000	62	39
$10,000-$14,999	26	16
$15,000-$19,999	17	11
$20,000-$24,999	14	9
$25,000-$34,999	17	11
$35,000-$49,999	9	6
$50,000 and above	15	9
TOTAL*	160	101

*Total does not equal 100 percent due to rounding. One hundred nine, or 40 percent, of the 269 survey participants did not respond to this question.

Source: Gruen Gruen + Associates

TABLE 5-4

Place of Residence

Location	Number	Percent
Daly City	89	37
San Francisco	57	23
South San Francisco	26	11
Pacifica	26	11
San Bruno	7	3
Millbrae	4	2
Burlingame	4	2
Other Bay Area locations	29	12
TOTAL*	242	101

*Total does not equal 100 percent due to rounding. Twenty-seven respondents did not answer this question.

Source: Gruen Gruen + Associates

percent each in South San Francisco and Pacifica, 3 percent in San Bruno and 2 percent each in Millbrae and Burlingame. The remaining 12 percent resided in scattered locations throughout the Bay Area.

D. RESPONDENT WORK PATTERNS

Length of Time Respondent Has Worked at Serramonte Shopping Center

One-half of the workers had been employed at Serramonte 13 months or less. An additional 20 percent had worked at the Center from between 14 months and 30 months. Seventeen percent indicated they had worked at Serramonte from 3 to 5 years, while only 13 percent of the worker respondents were employed at Serramonte for over 5 years. The length of time the respondents had been employed at Serramonte is presented in Table 5-5.

Respondent's Work Schedule

Forty-six percent of the 267 respondents who answered this question indicated they were employed at Serramonte full-time, while 54 percent said they were employed on a part-time basis. Seventy-eight percent of the respondents indicated they worked regular hours and 22 percent said that their hours were regular.

Ten a.m. was the arrival time and 8 p.m. the departure time for half of the sample who indicated that they work regular hours. The average arrival and departure times

TABLE 5-5

Length of Time Worked at Serramonte Shopping Center

Time Period	Number	Percent
1.1 years or less	123	50
1.2 - 2.5 years	52	21
2.6 - 5.0 years	41	17
5.1 years or more	32	13
TOTAL*	247	101

*Total does not equal 100 percent due to rounding. Twenty-one respondents did not answer this question.

Source: Gruen Gruen + Associates

do not vary appreciably during the weekdays. There does appear to be a somewhat earlier Saturday morning and somewhat later Sunday morning arrival. Sundays are associated with an earlier and Mondays a later departure time than are Tuesdays, Thursdays and Saturdays. The median arrival and departure times are shown on Table 5-6.

Respondent's Commute Pattern

Table 5-7 shows the respondent's usual travel mode. Sixty-nine percent of the worker respondents drive to work by themselves. Approximately ten percent say they are able to get a ride to work. Sixteen-and-a-half percent ride the bus and almost three percent walk to work.

The Relationship Between the Availability of an Automobile and Bus Ridership

Sixty-eight percent of the sample indicated they had a car available most days, 14 percent some days and 18 percent, or 48 respondents, no days. Table 5-8 presents a cross-tabulation of the number of workers who routinely take the bus to work and car availability. The non-parametric chi square (X^2) test of significance was run for all cross-tabulations to indicate the statistical significance level, or the degree of confidence the analyst has in rejecting the null hypothesis.* Seventy-three percent of all worker respondents who said they do not have the use of a car rode the bus to work. Less than one percent of those who said that a car was

*The null hypothesis states that there is no difference between subgroupings on the variable being tested.

TABLE 5-6

Median Arrival and Departure
Times for Regularly Scheduled Workers

	Arrival Time	Departure Time
Monday	10:06 AM	9:00 PM
Tuesday	10:04 AM	8:02 PM
Wednesday	10:04 AM	8:02 PM
Thursday	10:31 AM	8:04 PM
Friday	10:04 AM	8:04 PM
Saturday	9:32 AM	8:01 PM
Sunday	11:04 AM	5:00 PM

Source: Gruen Gruen + Associates

TABLE 5-7

Respondent's Travel Mode

	Number	Percent
Drive to work	181	69.3
Car pool	4	1.5
Get a ride	25	9.6
Walk	7	2.2
Bicycle	1	0.4
Bus	43	16.5
TOTAL*	261	100.0

*Eight respondents did not answer this question.

Source: Gruen Gruen + Associates

TABLE 5-8

Car Availability and Travel Mode

Travel Mode	Car Availability					
	Most Days		Some Days		No Days	
	#	%	#	%	#	%
Rides bus	1	0.6	7	20.0	35	72.9
Other modes	177	99.4	28	80.0	13	27.1
TOTAL	178	100.0	35	100.0	48	100.0

X^2 = 144.193 with 2 degrees of freedom significance = >.0001.

Source: Gruen Gruen + Associates

available most days took a bus to work, while 20 percent who had a car available some days rode the bus to their Serramonte job.

Travel Time

Table 5-9 shows the amount of time it usually takes the worker respondent to get to work. The average (mean) worker travels 20 minutes while, half the sample takes less and half more than 15 minutes to get to work. The amount of time the worker respondent spends commuting to Serramonte is also statistically related to the respondent's travel mode, as is demonstrated in Table 5-10. Somewhat over 60 percent of all bus riders, as contrasted to 17 percent of those workers who use non-bus modes, expend more than 20 minutes in their commute trip. At the other end of the continuum, only two percent of the bus riders arrive at work in less than five minutes, while 23 percent of those taking other modes routinely get to work in under five minutes.

The Influence of the Availability of Public Transit on the Respondent's Decision to Work at Serramonte

One-fourth of the sample indicated that the availability of public transit influenced their decision to work at the Serramonte Shopping Center. More than half (51 percent) of the worker respondents who ride the bus to work specified that the availability of public transit influenced their workplace decision, while only 20 percent of

TABLE 5-9

Travel Time in Minutes

Minutes	Number	Percent
Less than 10	61	23.4
10 - 14	56	21.4
15 - 19	48	18.4
20 - 24	34	13.0
25 - 34	22	8.4
35 - 44	5	1.9
45+	35	13.4
TOTAL*	261	99.5

*Total does not equal 100 percent due to rounding.
Six respondents did not answer this question.

Source: Gruen Gruen + Associates

TABLE 5-10

Commute Mode and the Time It
Takes the Respondent to Get to Work

Commute Mode	Travel Time: 5 Minutes or More		6-10 Minutes		11-15 Minutes		16-20 Minutes		More than 20 Minutes		Total*	
	#	%	#	%	#	%	#	%	#	%	#	%
Rides Bus	1	2.3	4	9.3	7	16.3	5	11.6	26	60.5	43	100.0
Other Modes	49	22.7	58	25.5	44	20.4	31	14.4	37	17.1	216	100.1

*Total does not equal 100 percent due to rounding.

X^2 = 39.994 with 4 degrees of freedom significance = >.0001.

Source: Gruen Gruen + Associates

those who routinely use other commute modes indicated that the availability of public transit influenced their work decision. The proportion of respondents who indicated that the availability of public transit influenced their workplace decision by the respondent's usual commute mode is shown in Table 5-11.

Parking Location

Those worker respondents who drive to work were asked their usual parking location. It must be noted that the responses, summarized in Table 5-12, are influenced by where the respondent is employed. Since Macy's, Mervyn's, Long's and QFI did not participate in the survey, the responses to this and other locational questions are likely to be highly influenced by their absence. That 53 worker respondents park in front of Montgomery Ward's, therefore, is not unrelated to the fact that 49 of the respondents work at Montgomery Ward's.

E. FACTORS INFLUENCING INCREASED BUS RIDERSHIP

The factors that would influence non-bus-rider respondents to take the bus to work are summarized in Table 5-13. One hundred eighty-three, or 68 percent, of the worker respondent sample specified that they would ride the bus more often to work provided that a series of service factors were met. "More frequent service" was the factor that appeared to have the potentially greatest

TABLE 5-11

The Influence of the Availability of Public Transit Upon the Respondent's Workplace Decision by the Respondent's Commute Mode

Commute Mode	Public Transit Influenced Respondent's Workplace Decision: Yes #	Yes %	No #	No %	Total #	Total %
Rides Bus	21	51.2	20	48.8	41	100.0
Uses Other Modes	40	20.0	160	80.0	200	100.0

X^2 = 15.929 with 1 degree of freedom significance = .0001.

Source: Gruen Gruen + Associates

TABLE 5-12

Respondent's Parking Location

Location	Number	Percent
Montgomery Ward	53	26
Between QFI and Ward's	37	18
Mervyn's	31	15
Between Mervyn's and Macy's	26	13
Macy's	15	7
Between QFI and Long's	15	7
Between Ward's and Mervyn's	15	7
Between Macy's and QFI/Long's	12	6
TOTAL*	258	100

*Eleven respondents did not answer this question.

Source: Gruen Gruen + Associates

TABLE 5-13

Factors Influencing an Increase in Bus Ridership

	Number	Percent
More frequent service	66	36
Bus routes/stop near your home	37	20
On-time buses	25	14
Faster buses	27	15
Change bus stop location at Center	5	3
Other	23	13
TOTAL*	183	101

*Total does not equal 100 percent due to rounding. Eighty-six respondents did not answer this question.

Source: Gruen Gruen + Associates

positive influence on increased bus ridership. Thirty-six percent of those workers who answered this question indicated that they would ride the bus to work more often if more frequent service were available. A bus route or stop closer to the respondent's home, cited by 20 percent of the respondents, was the second most influencing factor. On-time buses and faster buses would encourage 14 and 15 percent of the sample, respectively, to ride the bus more frequently. Only five respondents, or three percent of the sample, specified that they would ride the bus more frequently if there were a change in the location of the bus stop at Serramonte. Two specified that a Macy's bus stop location, two a QFI/Montgomery Ward location and one a Montgomery Ward bus stop location would induce increased bus ridership. Once again, it is important to point out that the respondent sample was not representative of the Center's total work force. It must also be noted that in cases where a respondent indicated more than one factor that would influence his or her bus ridership, only one response (selected at random) was coded. An analysis of a series of cross-tabulations relating bus ridership to a series of demographic factors suggest that the only variable related to likelihood of bus ridership is car availability. In other words, the respondent's sex, age, residential location, work position and household income are not statistically related to the respondent's decision to ride the bus to work. Therefore, without a significant perceived upgrading in bus service, it is unlikely that a significant proportion of the worker commuters can be induced out of their cars and into public transit, with the two most influential

service factors being frequency of service and more convenient routing.

F. MONTHLY EXPENDITURE PATTERNS OF THE WORKER RESPONDENT SAMPLE

Respondents were asked to estimate the amount of dollars their household spends, on the average, in Serramonte Center for meals (food and beverage items) eaten at the Center, groceries and other food and beverage items taken away from the Center and for all non-food items.

The average (mean) worker respondent routinely spends about $201 per month for all of the above. Table 5-14 presents the mean and median breakdowns by retail category. The maximum monthly expenditures are for non-food expenditures followed by take-out food and beverage items. The Center's workforce would appear, therefore, to serve as a significant captive market making significant contributions to Center sales.

TABLE 5-14

Monthly Expenditure Patterns for Worker
Respondent Households at Serramonte Shopping Center

Retail Category	Mean	Median
Meals and food and beverage items eaten at Center	$49.36	$30.20
Groceries and other food and beverage items taken away from the Center	$65.33	$25.60
All non-food items	$93.36	$50.10

Source: Gruen Gruen + Associates

DO NOT WRITE IN THIS SPACE

CARD NO. ____1

QUEST. NO. ____2 3 4

SERRAMONTE EMPLOYEE SURVEY

SamTrans and Serramonte Shopping Center are currently working together to find out about employees' travel patterns to and from work at Serramonte. Please help by taking a moment to fill out this confidential questionnaire and return it to your employer or to the Serramonte Center office. Please do not put your name on the questionnaire.

1. At which store or restaurant do you work at Serramonte? ____5 6 7

   _____

   (If you work for Serramonte Shopping Center management, please check here _____)

2. How long have you worked at Serramonte Shopping Center? Please fill in the number of months or years and circle either "months" or "years". ____8 9 10

   _____ months or years

3. Do you work full-time or part-time? ____11

   _____1 full-time

   _____2 part-time

4. Which days do you usually work, and at what times do you usually arrive and leave? For each day listed below, please fill in your usual time of arrival and departure, or check "varies" if your schedule changes from day to day, or check "do not work" if you do not work on a particular day. ____12

   No set schedule of days _____

Day	Arrive at:	Leave at:	Varies	Do Not Work
Monday	_____	_____	_____	_____
Tuesday	_____	_____	_____	_____
Wednesday	_____	_____	_____	_____
Thursday	_____	_____	_____	_____
Friday	_____	_____	_____	_____
Saturday	_____	_____	_____	_____
Sunday	_____	_____	_____	_____

____13 14 15
____16 17 18
____19 20 21
____22 23 24
____25 26 27
____28 29 30
____31 32 33
____34 35 36
____37 38 39
____40 41 42
____43 44 45
____46 47 48
____49 50 51
____52 53 54

5. How long does it usually take you to get to work? ____55 56 57

_____ minutes

6. Do you have a car available to get to work? ____58

_____1 yes, most days
_____2 yes, some days
_____3 no

7. How do you usually travel to work? ____59

_____1 drive
_____2 car pool
_____3 get a ride
_____4 walk
_____5 bicycle
_____6 bus
_____7 other (explain) _____

8. If you drive or car pool, where do you usually park? ____60

_____1 near Mervyn's
_____2 near Macy's
_____3 near QFI/Long's
_____4 near Montgomery Ward's
_____5 between Mervyn's and Macy's
_____6 between Macy's and QFI/Long's
_____7 Between QFI/Long's and Montgomery Ward's
_____8 Between Montgomery Ward's and Mervyn's

9. If you do not usually ride the bus to work, what changes in bus service would you want before you would ride the bus to Serramonte more often?

_____1 bus route/stop near your home
_____2 more frequent service
_____3 faster buses
_____4 on-time buses
_____5 change bus stop location at the center
IF CHECKED: To where? _____
_____6 other (specify) _____
_____

61
62 63

10. Did the availability of bus transportation to Serramonte influence your decision to work at this center?

64

_____1 yes _____2 no

11. About how many dollars per month do you and your household spend at Serramonte, on the average, for:

Meals and food and beverage items eaten at the center? _____ 65 66 67 68
Groceries and other food and beverage items taken away from the center? _____ 69 70 71 72
All non-food items? _____ 73 74 75 76

12. Do you charge all, most, some or none of the non-food purchases you make at Serramonte?

_____1 all
_____2 most
_____3 some
_____4 none

77

CARD NO. 2

13. Are you:

_____1 male
_____2 female

14. In what year were you born? _____

15. Where is your home?

street? _____
nearest cross street? _____
city? _____
zip code? _____

16. Which of the following best describes your work?

_____1 store owner
_____2 manager of store or department
_____3 buyer
_____4 retail clerk or salesperson
_____5 stockperson
_____6 kitchen worker
_____7 other food service worker
_____8 clerical/bookkeeper
_____9 personnel
_____10 other (specify) _____
_____

17. What was your approximate household income last year, before taxes?

_____1 A. Less than $10,000
_____2 B. $10,000 to $14,999
_____3 C. $15,000 to $19,999
_____4 D. $20,000 to $24,999
_____5 E. $25,000 to $34,999
_____6 F. $35,000 to $49,999
_____7 G. $50,000 or more

THANK YOU VERY MUCH FOR YOUR TIME AND TROUBLE. PLEASE RETURN THIS QUESTIONNAIRE TO YOUR EMPLOYER OR TO THE SERRAMONTE SHOPPING CENTER OFFICE.

TRANSIT USER SURVEYS

During the course of this study, SamTrans personnel conducted two on-site surveys at Serramonte Center. One survey was a check of passenger activity on buses that stop at the center. The other was a survey of passengers at the existing transit stop.

CHECK OF PASSENGER ACTIVITY

The check of passenger activity was conducted on Tuesday-Wednesday, October 5-6, 1982 and Saturday, October 9, 1982. For each bus scheduled to stop at Serramonte, SamTrans staff recorded the number of passengers boarding, disembarking and riding through. Based on other SamTrans records, they also recorded the total number of passengers on each run.

Table 6-1 summarizes the passenger on-off activity data for Tuesday-Wednesday, October 5-6. It shows that a total of 1,322 people got off the bus at Serramonte and 1,354 people got on the bus. (The difference between the two numbers may be explained by the fact that some people got a ride to the center and then took the bus home.)

TABLE 6-1

Passengers Getting On and Off the
Bus at Serramonte, October 6, 1982

Time*	Number Off	Number On
Up to 7:00 a.m.	2	2
7:01 to 7:30 a.m.	13	11
7:31 to 8:00 a.m.	26	27
8:01 to 8:30 a.m.	21	29
8:31 to 9:00 a.m.	35	18
9:01 to 9:30 a.m.	48	17
9:31 to 10:00 a.m.	51	12
10:01 to 10:30 a.m.	52	25
10:31 to 11:00 a.m.	48	43
11:01 to 11:30 a.m.	50	22
11:31 to 12:00 a.m.	86	43
12:01 to 12:30 p.m.	52	67
12:31 to 1:00 p.m.	72	63
1:01 to 1:30 p.m.	67	55
1:31 to 2:00 p.m.	74	68
2:01 to 2:30 p.m.	47	83
2:31 to 3:00 p.m.	66	97
3:01 to 3:30 p.m.	83	92
3:31 to 4:00 p.m.	74	68
4:01 to 4:30 p.m.	99	71
4:31 to 5:00 p.m.	53	106
5:01 to 5:30 p.m.	42	67
5:31 to 6:00 p.m.	62	88
6:01 to 6:30 p.m.	20	44
6:31 to 7:00 p.m.	44	64
7:01 to 7:30 p.m.	7	26
7:31 to 8:00 p.m.	7	9
8:01 to 8:30 p.m.	17	10
8:31 to 9:00 p.m.	2	11
9:01 to 9:30 p.m.	0	8
9:31 on	2	8
TOTAL	1,322	1,354

*Scheduled arrival time.

Source: SamTrans survey and passenger counts.

More people got off the bus at Serramonte between 4:01 and 4:30 p.m. (99 people), between 11:31 and 12:00 a.m. (86 people) and between 3:01 and 3:30 p.m. (83 people) than at any other time. More people boarded the bus between 4:31 and 5:00 p.m. (106 people), between 2:31 and 3:00 p.m. (97 people) and between 3:01 and 3:30 p.m. (92 people) than at any other times.

Table 6-2 compares the passenger on-off data for October 6 to the number of buses stopping at Serramonte and the number of through passengers on buses stopping at Serramonte. The table indicates that between 20 and 21 percent of the passengers on those buses either got on or got off the bus at Serramonte. The percentages varied through the day, from a low of less than one percent before 7:00 a.m. to a high of over 37 percent between 11:31 and 12:00 a.m. and between 12:31 and 1:00 p.m..

Table 6-2 also shows that an average of about 10 people either got on or got off each bus at Serramonte. These figures ranged from a low of less than 1 person, before 7:00 a.m., to a high of almost 18 people, between 3:31 and 4:00 p.m..

TABLE 6-2

Passenger Activity at Serramonte Related to
Total Passenger Activity and Transit Service, October 6, 1982

Time*	Total Passengers Using Serramonte	Total Passengers	Serra-monte % of Total	Number of Buses	Average Serramonte Passengers per Bus
Up to 7:00 a.m.	4	647	0.6	14	0.3
7:01 to 7:30 a.m.	24	416	5.8	7	3.4
7:31 to 8:00 a.m.	53	1,059	5.0	11	4.8
8:01 to 8:30 a.m.	50	533	9.4	9	5.6
8:31 to 9:00 a.m.	53	468	11.3	9	5.9
9:01 to 9:30 a.m.	65	229	28.3	10	6.5
9:31 to 10:00 a.m.	63	284	22.2	10	6.3
10:01 to 10:30 a.m.	77	322	23.9	8	9.6
10:31 to 11:00 a.m.	91	259	35.1	10	9.1
11:01 to 11:30 a.m.	72	341	21.1	8	9.0
11:31 to 12:00 a.m.	129	348	37.1	10	12.9
12:01 to 12:30 p.m.	119	410	29.0	8	14.9
12:31 to 1:00 p.m.	135	363	37.2	10	13.5
1:01 to 1:30 p.m.	122	411	29.7	8	15.3
1:31 to 2:00 p.m.	142	448	31.7	10	14.2
2:01 to 2:30 p.m.	130	519	25.0	10	13.0
2:31 to 3:00 p.m.	163	680	24.0	9	18.1
3:01 to 3:30 p.m.	175	871	20.1	11	15.9
3:31 to 4:00 p.m.	142	630	22.5	8	17.8
4:01 to 4:30 p.m.	170	725	23.4	12	14.2
4:31 to 5:00 p.m.	159	621	25.6	12	13.3
5:01 to 5:30 p.m.	109	489	22.3	11	9.9
5:31 to 6:00 p.m.	150	693	21.6	13	11.5
6:01 to 6:30 p.m.	64	353	18.1	9	7.1
6:31 to 7:00 p.m.	108	381	28.3	9	12.0
7:01 to 7:30 p.m.	33	159	20.8	5	6.6
7:31 to 8:00 p.m.	16	86	18.6	4	4.0
8:01 to 8:30 p.m.	27	83	32.5	4	6.8
8:31 to 9:00 p.m.	13	48	27.1	3	4.3
9:01 to 9:30 p.m.	8	52	15.4	3	2.7
9:31 on	10	103	9.7	5	7.0
TOTAL	2,676	13,031	20.5	270	9.9

*Scheduled arrival time.

Source: SamTrans survey and passenger counts.

A similar survey of passenger activity was made on Saturday, October 9, 1982. That survey, conducted by the bus drivers, revealed that 1,656 people got off the bus at Serramonte and 1,543 people got on the bus at the center. These figures are higher than those for the preceding Wednesday. The greatest number of riders got off the bus between 12:01 and 12:30 p.m. (145 people); the greatest number got on the bus between 4:01 and 4:30 p.m. (169 people). The numbers of people getting on and off buses at Serramonte throughout the day are summarized in Table 6-3.

Table 6-4 compares the number of bus passengers using Serramonte - that is, getting on or off the bus there - on Saturday to the total ridership. It indicates that, overall, over 58 percent of the people who rode buses on routes that stop at the center got on or off the bus there. The percentages ranged from lows of 0, after 7:00 p.m., and 4.5 percent, between 8:01 and 8:30 a.m., to a high of almost 78 percent between 4:01 and 4:30 p.m..

TABLE 6-3

Passengers Getting On and Off the
Bus at Serramonte, October 9, 1982

Time*	Number Off	Number On
Up to 7:00 a.m.	0	0
7:01 to 7:30 a.m.	0	0
7:31 to 8:00 a.m.	0	4
8:01 to 8:30 a.m.	0	1
8:31 to 9:00 a.m.	33	9
9:01 to 9:30 a.m.	52	23
9:31 to 10:00 a.m.	76	47
10:01 to 10:30 a.m.	55	12
10:31 to 11:00 a.m.	83	36
11:01 to 11:30 a.m.	63	58
11:31 to 12:00 a.m.	112	70
12:01 to 12:30 p.m.	145	67
12:31 to 1:00 p.m.	110	104
1:01 to 1:30 p.m.	129	50
1:31 to 2:00 p.m.	132	102
2:01 to 2:30 p.m.	108	99
2:31 to 3:00 p.m.	121	121
3:01 to 3:30 p.m.	106	143
3:31 to 4:00 p.m.	55	89
4:01 to 4:30 p.m.	76	169
4:31 to 5:00 p.m.	53	109
5:01 to 5:30 p.m.	115	120
5:31 to 6:00 p.m.	16	55
6:01 to 6:30 p.m.	11	4
6:31 to 7:00 p.m.	5	51
7:01 on	0	0
TOTAL	1,656	1,543

*Scheduled arrival time.

Source: SamTrans survey and passenger counts.

TABLE 6-4

Passenger Activity at Serramonte Related to
Total Passenger Activity and Transit Service, October 9, 1982

Time*	Total Passengers On and Off	Total Passengers	Serra-monte % of Total	Number of Buses	Average Serramonte Passengers per Bus
7:31 to 8:00 a.m.	4	36	11.1	1	4.0
8:01 to 8:30 a.m.	1	22	4.5	1	1.0
8:31 to 9:00 a.m.	42	104	40.4	5	8.4
9:01 to 9:30 a.m.	75	120	62.5	4	18.9
9:31 to 10:00 a.m.	123	206	59.7	7	17.6
10:01 to 10:30 a.m.	67	169	39.6	5	13.4
10:31 to 11:00 a.m.	119	247	48.2	7	17.0
11:01 to 11:30 a.m.	121	290	41.7	5	24.2
11:31 to 12:00 a.m.	182	339	53.7	7	26.0
12:01 to 12:30 p.m.	212	364	58.2	6	35.3
12:31 to 1:00 p.m.	214	281	76.2	8	26.8
1:01 to 1:30 p.m.	179	347	51.6	8	22.4
1:31 to 2:00 p.m.	234	330	70.9	7	33.4
2:01 to 2:30 p.m.	207	370	55.9	7	29.6
2:31 to 3:00 p.m.	242	352	68.8	8	30.3
3:01 to 3:30 p.m.	249	372	66.9	8	31.1
3:31 to 4:00 p.m.	144	252	57.1	8	18.0
4:01 to 4:30 p.m.	245	315	77.8	8	30.6
4:31 to 5:00 p.m.	162	231	70.1	6	27.0
5:01 to 5:30 p.m.	235	341	68.9	6	39.2
5:31 to 6:00 p.m.	71	181	39.2	5	14.2
6:01 to 6:30 p.m.	15	92	16.3	4	3.8
6:31 to 7:00 p.m.	56	79	70.9	2	28.0
7:01 on	0	30	0.0	1	0.0
TOTAL	3,199	5,470	58.5	138	23.2

*Scheduled arrival time.

Source: SamTrans survey and passenger counts.

Table 6.4 also shows the average number of passengers per bus who either got off or got on at Serramonte. The overall average was just over 23 passengers, more than double the Wednesday average of about 10. Averages throughout the day ranged from a low of 1 per bus, between 7:31 and 8:00 a.m., to a high of over 39 per bus, between 5:01 and 5:30 p.m..

SURVEY OF PASSENGERS

On Tuesday, October 5, 1982, Wednesday, October 6, 1982, and Saturday, October 23, 1982, SamTrans also conducted a survey of passengers getting on or off the bus at the Serramonte Center transit facility. Questionnaires were distributed to all passengers at the transit facility. The questionnaires could be returned immediately or mailed back to SamTrans. A copy of the questionnaire is presented in Appendix B.

A total of 373 weekday riders and 121 Saturday riders returned the questionnaire. During the weekday time when the questionnaires were distributed, 1,322 people got off the bus and 1,354 people got on the bus. Assuming that

1,354 people received the questionnaire, the response rate was 27.5 percent.

On Saturday, a total of 1,656 people got off the bus and 1,543 people got on; assuming that 1,656 received the questionnaire, the response rate was 7.3 percent. Because survey respondents were in both cases self-selected - that is, each individual chose whether he or she would participate - the results may be used to provide insights into bus rider behavior but may not be assigned statistical significance.

Information About Weekday Riders

Weekday survey respondents tended to ride the bus during the evening peak hours (between 2:00 and 6:00 p.m.), to stop at Serramonte in order to transfer rather than to shop and to be between 19 and 40 years old. Table 6-5 pares the distribution of all riders over time to the distribution of survey respondents over time. The table shows that while most survey respondents (46 percent) rode during the evening peak, most passengers (almost 45 percent) rode during the midday hours. Nevertheless,

TABLE 6-5

Serramonte Bus Riders and
Survey Respondents by Time of Day, Weekday

Time	All Riders		Survey Respondents	
	Number	Percent	Number	Percent
Morning Peak (up to 8:30 a.m.)	131	4.9	24	6.5
Midday (8:31 a.m.-2:30 p.m.)	1,198	44.8	134	36.0
Evening Peak (2:31 p.m.-6:00 p.m.)	1,068	39.9	171	46.0
Evening (6:01 p.m.-10:30 p.m.)	279	10.4	43	11.6
TOTAL	2,676	100.0	372	100.0

Source: SamTrans survey and passenger counts.

this difference was not statistically significant when measured by the non-parametric chi-square test; in other words, there can be no assurance that the likelihood that a passenger would return the questionnaire was related to the time at which he or she rode the bus.

Table 6-6 summarizes the reasons why weekday respondents came to Serramonte. It shows the primary reason was to buy something (almost 59 percent) and the next most frequent reason was to transfer (almost 29 percent). Almost 13 percent of the respondents worked at the Center.

Table 6-7 presents information about purchases made by respondents. Although 186 people said their primary trip purpose was to buy something, 216 said they actually made a purchase while at the center. The majority of those (over 65 percent) spent between $10 and $50; 18 percent spent over $50, while the remaining 17 percent spent less than $10.

Table 6-8 shows the ages of survey respondents. Approximately 18 percent were younger than 18 years old - generally non-driving ages - while almost 63 percent were

TABLE 6-6

Reasons for Coming to Serramonte:
Weekday Respondents

Reason	Number	Percent of Respondents
Buy Something	186	58.7
Transfer	91	28.7
Work	40	12.6
TOTAL	317	100.0

Source: SamTrans survey and passenger counts.

TABLE 6-7

Purchases Made by Respondents, Weekday

Value of Purchase	Number of Respondents	Percent of Respondents
Less than $10	36	16.7
$10-$50	141	65.3
More than $50	39	18.0
TOTAL	216	100.0

Source: SamTrans survey and passenger counts.

TABLE 6-8

Ages of Survey Respondents, Weekday

Age	Number of Respondents	Percent of Respondents
13 or younger	10	2.7
14 to 18	55	15.0
SUBTOTAL	65	17.7
19 to 25	81	22.1
26 to 40	84	23.0
41 to 64	65	17.8
SUBTOTAL	230	62.9
65 or older	71	19.4
TOTAL	366	100.0

Source: SamTrans survey and passenger counts.

aged between 19 and 64 years. The remaining 19 percent were older than 64.

Information About Saturday Respondents

Survey respondents who received their questionnaires on Saturday generally came to Serramonte to buy something. Table 6-9 summarizes the trip purposes of the respondents, and shows that almost 79 percent came to the center to make a purchase, almost 14 percent came to transfer and about 7 percent came to work. Compared to the weekday riders, a greater percentage of the Saturday respondents came to shop and smaller percentages came to transfer or to work.

Table 6-10 describes the purchases made by survey respondents. As with the weekday respondents, a greater number of riders said they actually made a purchase than said they came intending to make a purchase (in this case, 85 came to buy something and 92 made a purchase). Of those who did buy something, 63 percent spent between $10 and $50, about 23 percent spent more than $50 and about 14 percent spent less than $10. Compared to the weekday

TABLE 6-9

Reasons for Coming to Serramonte:
Saturday Respondents

Reason	Number of Respondents	Percent of Respondents
Buy something	85	78.7
Transfer	15	13.9
Work	8	7.4
TOTAL	108	100.0

Source: SamTrans survey and passenger counts.

TABLE 6-10

Purchases Made by Respondents, Saturday

Value of Purchase	Number of Respondents	Percent of Respondents
Less than $10	13	14.1
$10-$50	58	63.0
More than $50	21	22.8
TOTAL	92	99.9

Source: SamTrans survey and passenger counts.

respondents, then, the Saturday shoppers spent more at the center.

Table 6-11 presents the age distribution for Saturday respondents. It shows that between 14 and 15 percent of those who returned the questionnaire were 18 years old or younger, almost 70 percent were between 19 and 64, and about 16 percent were 65 or older. Thus, the Saturday riders' ages were more concentrated in the middle age group (19-64) than the weekday riders' ages, which may indicate that people who work elsewhere during the week ride the bus to shop at Serramonte on the weekends.

TABLE 6-11

Ages of Survey Respondents, Saturday

Age	Number of Respondents	Percent of Respondents
13 or younger	3	2.5
14 to 18	14	11.9
SUBTOTAL	17	14.4
19 to 25	15	12.7
26 to 40	26	22.0
41 to 64	41	34.7
SUBTOTAL	82	69.4
65 or older	19	16.1
TOTAL	118	99.9

Source: SamTrans survey and passenger counts.

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samTrans

SERRAMONTE SHOPPING CENTER
BUS SURVEY

Please take a moment to help us in planning for your travel needs by filling out this Questionnaire. Upon completion you may drop it in any mailbox. No stamp is necessary. Only one survey per person please.

Thank you,

samTrans

1) What bus route did you arrive at the Serramonte Shopping Center on?
- ☐ 20C
- ☐ 20J
- ☐ 21A
- ☐ 21B
- ☐ 10S
- ☐ 3C
- ☐ Other _____
- ☐ Didn't take the bus

2) What bus route will you take to leave?
- ☐ 20C
- ☐ 20J
- ☐ 21A
- ☐ 21B
- ☐ 10S
- ☐ 3C
- ☐ Other _____
- ☐ Won't take the bus

3) Where did you begin your trip to the Serramonte Shopping Center?
(zip code) _____
If zip code not known, use nearest intersection

4) Was your main reason for getting off here to:
- ☐ Buy something
- ☐ Look around
- ☐ Transfer to another bus
- ☐ Work in a store
- ☐ Eat
- ☐ Other _____

5) Did you, or do you intend to, make a purchase?
- ☐ YES
- ☐ NO

6) If so, is that purchase:
- ☐ less than $10
- ☐ $10 - $50
- ☐ Over $50

7) How long did you stay at the shopping center?
- ☐ Less than ½ hour
- ☐ ½ to 1 hour
- ☐ 1 to 2 hours
- ☐ More than 2 hours

8) What is your age?
- ☐ 0 13 years
- ☐ 14 - 18 years
- ☐ 19 - 25 years
- ☐ 26 - 40 years
- ☐ 41 - 64 years
- ☐ 65 and over

9) Do you have any suggestions for improving bus service at the Serramonte Shopping Center?

_____

_____

_____

NOTICE

DOT-I-83-45

DOT-I-83-45

TECHNOLOGY SHARING

SPECIAL STUDIES IN TRANSPORTATION PLANNING (SSTP)

PROGRAMS OF THE U.S. DEPARTMENT OF TRANSPORTATION