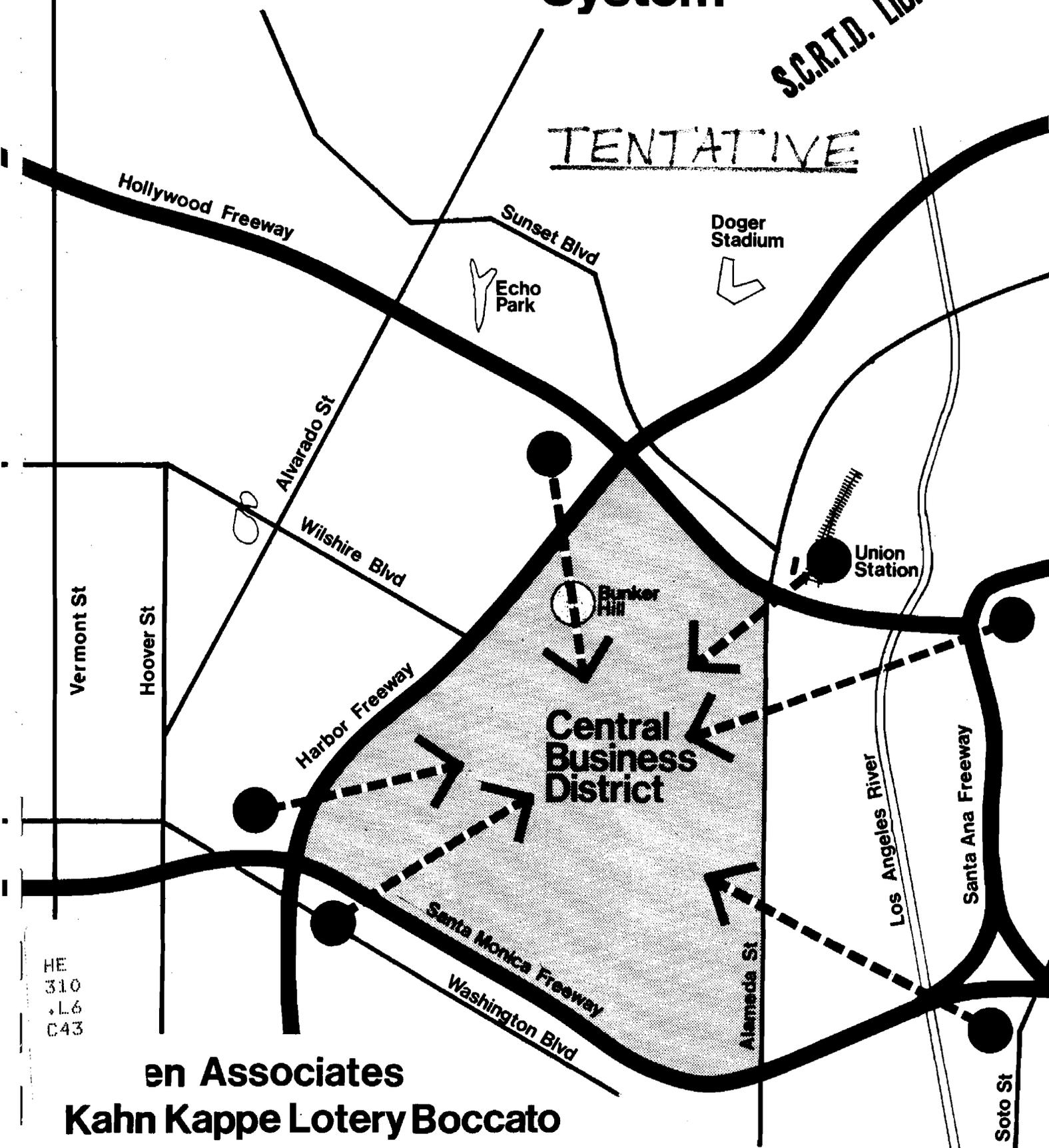


● Parking Terminal
and/or Bus
Intercept From
Freeway
25

CBD • Bunker Hill People Mover System

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TENTATIVE



HE
310
+L6
C43

en Associates
Kahn Kappe Lotery Boccato
Keyser Marston Associates

WALLEN ASSOCIATES

Transportation Consultants
Suite 103
1830 West Olympic Boulevard
Los Angeles, California 90006
(213) 385-7567

February 10, 1975

Mr. Irwin Rowe
Community Redevelopment Agency
727 West 7th Street, Suite 400
Los Angeles, California 90017

Dear Mr. Rowe:

Subj: Study Design of CBD-Bunker Hill People Mover
System

In accordance with your request we are transmitting a proposed amendment to BH-TRANS-4 to accomplish the work required to resolve the issues relating to a base leg peripheral parking and people mover system for Bunker Hill and the CBD. This document supersedes that of December 24, 1974.

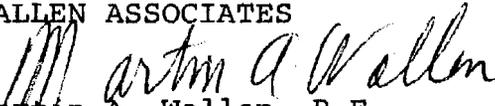
You will note that in order to meet the requirements of time, minimum budget, and community acceptance, direct participation by different agencies is an integral part of the work to be performed. It is our belief that the cooperative effort of the CRA, other agencies, and consultants can most effectively complete the work and secure agreement on the findings.

We are prepared to meet with you and other agencies in order to reach firm agreement on the expanded scope of work, project details, work to be performed by participating agencies, and consultants' fee. It is hoped that these matters can be resolved expeditiously so that work can be underway by early March.

Wallen Associates, Kahn Kappe Lotery Boccato, and Keyser Marston Associates appreciate this opportunity to be of service and are ready to start work immediately upon receipt of a notice to proceed and to complete the investigation in the allotted time.

Very truly yours,

WALLEN ASSOCIATES


Martin A. Wallen, P.E.

MAW/gk
Encl.

cc: Herbert Kahn
Jerry Keyser

CBD - BUNKER HILL PEOPLE MOVER ANALYSIS

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2. Statement of Need
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6. Organizational Structure, Participating Agencies,
Project Management
7. Time Schedule and Fee
8. Key Personnel

1. INTRODUCTION

This work statement is in response to the request of the Community Redevelopment Agency for assistance in developing information necessary to determine the feasibility of constructing a people mover element through the Bunker Hill Urban Renewal Project. If this statement satisfies the requirements of the CRA, action will be taken to amend the existing contract BH-TRANS-4 with Wallen Associates so that the work described herein can be accomplished.

This work statement differs substantially, in one respect, from that submitted on December 24, 1974. This statement speaks to the question of a network for the entire CBD while that of December 24th is limited to fixed guideway elements through Bunker Hill.

what authority was given to do this?

The original concept was to expand the previous CRA work from a single east-west line to a series of potential routes radiating from the upper hill station within Bunker Hill. These would include Dodger Stadium, the San Bernardino Freeway, south to the Sports Arena intercepting the Santa Monica and/or Harbor Freeway. The east-west route and any others that impact upon a community would be examined by the consultants with community participation in order to develop mitigating and/or positive alternatives. These routes do not comprise a network; however, it is accepted that any fixed guideway system will have to be constructed incrementally and Bunker Hill is of prime consideration.

BH on the Hub? In this context?

Subsequent to the initial proposal it was determined that the study should include an overview examination of the entire central city transportation network. This is necessary to avoid implementation of a portion of the system that would not be compatible with future CBD and regional requirements. It is believed that such an overview study would assuage any concerns of UMTA in regard to incremental construction.

by whom?

OK

This work statement directly addresses the questions of a CBD network with the potential for regional extensions and that of an all bus alternative. It is not the objective of this study analysis to develop the optimum network. It is recognized that a network analysis is highly complex requiring extensive data and established public policies in regard to all aspects of the future of the CBD. However, an overview network sketch planning process, utilizing available data based upon "Service Demand", current disruptive conditions, and future transportation and planning goals, can establish a framework for the initial increment decision making after agreement has been reached that some form of fixed guideway construction will be required.

? in lieu of Trunk line RT?

Look that already been done Consider (ing)?

The question of bus or fixed guideway collection-distribution in the CBD has been addressed by an ad hoc group of City, State, County and transit district staff known as the 90 Day Study Team. This group is addressing the subject of expanded bus service and the adequacy of curb space and the level of service due to street traffic even with some diversion of existing auto usage to transit. The work of this group will be incorporated into this effort to provide a comparative evaluation with the fixed guideway concept.

What are the results?

The work described herein will be performed by a multi-disciplinary team of consultants plus technical specialists and the staffs of those agencies that have an interest in the outcome of the work. The reasons for this unique and interfacing management structure are several:

1. It is essential that a vast array of perspectives and capabilities be assembled to deal with a project of the complexity and significance of center city mobility and one which could become the keystone for future regional transportation systems.
2. Government decision making requires participation and understanding by the parties to be affected by the decision. This also applies to the communities to be impacted, which is why Community Participation is a key element of the organizational structure.

The accompanying "Statement of Need" and "Objectives" present WHY the people mover study should be undertaken. The "Scope of Work" is WHAT will be performed, and HOW the work will be accomplished is described in the "Work Program".

2. STATEMENT OF NEED

As an element of the Bunker Hill Urban Renewal Project the CRA has developed the concept of off-site parking linked to the project area by a double track people mover system. The original program called for two 4,000 parking facilities to the west and east. Current market projections and CBD planning objectives suggest a study of alternate project development which may mean a change in traffic and parking requirements affecting size, timing, or need for peripheral parking. Another issue is whether the suggested east-west sites for the parking structures and people mover facilities can be programmed in a manner acceptable to the immediate communities.

no. the original idea changed

The CRA has suggested that a Bunker Hill fixed guideway system have the capability of being expanded to intercept regional bus and rail transit and distribute passengers to their destinations in the Central Business District. The same fixed guideway system could have the capability to link a network of peripheral garages with CBD destinations.

Recent events have given emphasis to the concepts developed by the CRA. Probably the most significant is the proposal to set aside one lane in each freeway corridor for buses and high occupancy vehicles. This provides the potential for an almost instantaneous six corridor transit system serving the CBD. Another is the radical change in official attitude toward off street parking. In the past it has been the role of government to encourage maximum development of off street parking to facilitate use of the automobile. Environmental and energy concerns have resulted in consideration of a change in policy to minimize parking so as to discourage automobile usage. What modifications will be made in Los Angeles parking policy and when they will become effective has not been determined, but change in parking policy will occur.

The change in attitude toward transit and parking raises several questions:

1. Can the CBD street system accommodate a substantial increase in bus traffic in terms of street capacity and curb loading zones? NO
2. If peripheral parking is considered, can buses provide the required collection-distribution function and under what conditions is a fixed guideway system warranted? Or, if a fixed guideway system is necessary to serve a bus on freeway system, what is necessary to insure that such a system can also accommodate different degrees of peripheral parking?

*You suggest a
CBD people now
in 2000 create for H.G.
Trunk line RT?*

3. If a CBD fixed guideway system is justified in terms of transit intercept and/or auto intercept, should such a system have the capability to be expanded to provide future regional fixed guideway transit, and if so, what are the initial planning and design requirements to preserve this option?

A fixed guideway system has the potential to provide a higher form of intra-community movement than presently offered by the mini-bus or conventional transit. This factor must be part of route, station and implementation considerations and part of the benefit analysis, but may not be a prime reason for construction of a fixed guideway system.

This effort is needed to resolve the questions of off-site parking in association with the redevelopment of Bunker Hill and the larger issue of under what conditions a fixed guideway system should be considered for the CBD. If such a system is warranted, what should be the first increment of construction and can this element also satisfy the needs of the Bunker Hill project?

3. OBJECTIVES

The objectives of this analysis must satisfy a wide range of requirements of people, institutions and community.

1. To provide the framework for a decision on the first element of a fixed guideway CBD transit system capable of intercept of autos, regional bus, and rail transit.
2. To provide that there be sufficient remote parking to permit full development of Bunker Hill.
3. To assure that the development of a people mover system is supportive of the planning efforts of all jurisdictions which impact the CBD.
4. To protect and enhance neighborhoods and communities adjacent to and within the CBD.
5. To ensure that people mover criteria applicable to present requirements do not preclude the potential of system evolution to satisfy future regional demand and CBD potential.
6. To ascertain the methods of financing construction and operation with minimum local risk or investment and minimum fares.
7. To proceed in an expeditious manner so that implementation, if found desirable, can take place immediately.

4. SCOPE OF WORK

The initial study area will be the entire Central Business District of Los Angeles and its contiguous areas. The contiguous area limits are defined as follows:

West to Vermont Avenue, north to Dodger Stadium, east to Santa Ana Freeway and south to Sports Arena.

After the network aspect of the overview, the study area will be reduced to those corridors which show potential for first phase construction. The study area will be further reduced in the refinement phase when the components and issues will be examined in sufficient detail to establish the feasibility of implementing an initial leg of a fixed guideway system.

Inputs to this study are alternate planning, parking, and regional transportation policies for establishment of CBD service demand. The overview and refinement investigations will determine that segment of a potential fixed guideway system feasible for initial construction. Outputs will include the feedback or impact of transportation improvements.

PHASE 1 - OVERVIEW

The purpose of this phase is to identify those legs of a possible fixed guideway system that may warrant initial construction. This phase consists of two tasks, Networks and Selection of Alternatives.

A. Networks

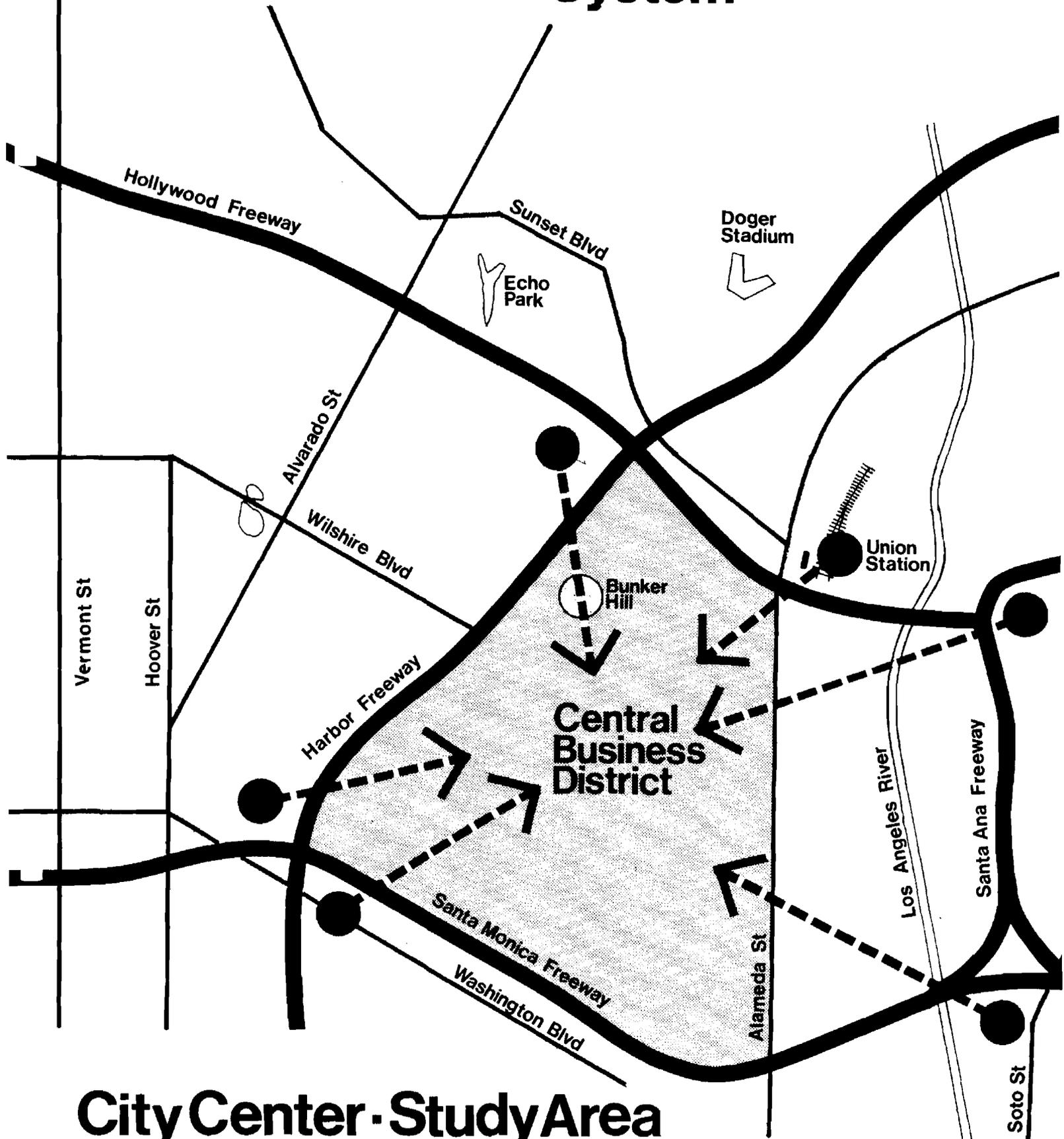
This task examines the reasons for a collection-distribution system and the respective ability of all bus or fixed guideway and bus systems to meet the service demand. The objective is to develop networks which will assure that incremental construction will comprise a system and not determine at this time the optimum network.

B. Selection of Alternatives

This task will study, on a broad scale, the alternative legs compatible within the network of a fixed guideway people mover system in order to select the more feasible leg or legs for consideration as an initial construction increment.

CBD • Bunker Hill People Mover System

● Parking Terminal
and/or Bus
Intercept From
Freeway



City Center • Study Area

PHASE 2 - REFINEMENT OF INITIAL LEGS

This phase of the work will examine in sufficient detail the leg or legs remaining after screening alternates in the "B" Overview in order to determine the strategy of the people mover system.

METHODOLOGY

The phases of the work will proceed in a similar method with the degree of effort relative to the general or specific nature of the study phase. The steps will be as follows:

1. Development of Resources and Data
2. Sketch Planning
3. Evaluation Process
4. Review by Policy Review Group
5. Preparation of Analysis Report

The process will relate the major components of the people mover system and their impacts on the physical, social, economic, financial and administrative elements of the structure of the City Center. The major components of the system are defined as follows:

1. Intercepts - The location and size necessary to transfer people from the regional transit system (bus, rail, etc.) to a smaller scale system compatible with the Central Business District.
2. Terminals - The location and size necessary for the point of transfer and storage of the automobile from a regional use to the smaller scale system.
3. Stations - The locations and sizes necessary for the arrival and departure point of passengers on the people mover route system.
4. Route System - The locations and size of the required path of travel of the people mover system.
5. Transit Mode - The method and generic class of hardware necessary to transport people on the system.
6. Storage and Maintenance - The location and size of a facility equipped to store and maintain the moving components of the people mover system.

5. WORK PROGRAM

The expansion of the scope of work from analysis of pre-determined routes to selection of routes compatible with a potential network, and then evaluation of alternatives, resulted in a manifold increase in the complexity of the Work Program. To assure proper identification of major tasks, avoidance of extraneous issues, and proper sequencing and interaction of the many work items, it was found necessary to prepare a Work Flow Diagram which is included herein.

Network Analysis

A very sensitive aspect of the Work Program is design of the network studies and treatment of the bus alternative. It was realized that an attempt to prepare an optimum network is not desirable because conditions can change substantially during the implementation process. What is necessary is the assurance that initial construction will not limit or preclude future expansion and the option to construct an extensive CBD network.

The question of "need" for a people mover system has a bearing on many issues including that of the all-bus alternative. Past studies have indicated that there may not be adequate street capacity or curb loading space, which will be an important factor in an overview study of an all-bus alternative.

Peripheral parking has the potential to substantially reduce auto traffic penetrating the CBD. A certain number of through trips and service vehicles will not be affected by such action but a high proportion of auto work trips could be accommodated in peripheral parking facilities if there were adequate linkage between parking and destination. An issue is whether bus transit can be designed to provide adequate linkage or whether a fixed guideway system is required for this service. In the case of the east-west peripheral parking terminals for the Bunker Hill Urban Renewal Project, the Community Redevelopment Agency selected a fixed guideway system based on quality of service, less travel time on system, which was deemed necessary to make peripheral parking attractive to potential users.

The bus network analysis in this study is for the purpose of establishing a base line for comparison with fixed guideway in terms of cost, service, and determination of capacity levels when existing CBD bus operation should be converted to fixed guideway service. This is an important factor because substantial new bus service on freeway preferential lanes will have been placed in operation prior to the earliest possible date of

Network

Input Movement

FREEWAY BUS TO CBD N-1A

CBD PERIPHERAL PARKING POTENTIAL N-1B

POTENTIAL AIRTRAK CBD-SERVICE N-1C

POTENTIAL EXPANDED LOCAL SERVICE TO CBD N-1D

BUNKER HILL TRANSIT AND PARKING REQUIREMENTS N-1E

90 DAY STUDY N-1K

CBD Factors

EXISTING CBD POPULATION DENSITY AND DISTRIBUTION N-1F

EXISTING CBD STREET SYSTEM CAPACITY FOR AUTO AND BUS TRAFFIC N-1G

EXISTING CBD PARKING SUPPLY LOCATION AND DEMAND N-1H

L.A. CITY FUTURE CBD DEVELOPMENT N-1I

PATRON INDUCEMENT POLICIES (PARKING MANAGEMENT) N-1J

INTRA CBD MOVEMENT N-1L

Fixed Guideway Route Factors

FIXED GUIDEWAY SYSTEM ROUTE FACTORS N-3

TRANSIT INTERCEPTS (LOCATIONS) N-3A

PERIPHERAL PARKING POTENTIALS (LOCATIONS) N-3B

ACCESS TO UNDER UTILIZED EXISTING PARKING (LOCATIONS) N-3C

ACTIVITY CENTERS (LOCATIONS) N-3D

Bus Factors

SERVICE STREET CAPABILITY TO ACCOMMODATE ALL BUS TRANSIT N-2A

BUS CAPITAL AND OPERATING COSTS N-2B

Service Demand N-1

Sketch Planning N-2

Fixed Guideway Factors

CAPABILITY TO ACCOMMODATE SERVICE DEMAND N-4A

LOCATION OF ROUTES AND STATIONS N-4B

TECHNOLOGY N-4C

RESIDENTIAL AND BUSINESS COMMUNITY IMPACTS N-4D

IDENTIFY COMMUNITY INTERESTS N-4E

CAPITAL AND OPERATING COSTS N-4F

OPPORTUNITIES FOR ECONOMIC SOCIAL BENEFITS N-4G

IDENTIFY POTENTIAL SYSTEM EXPANSION BEYOND CBD NETWORK N-4H

POTENTIAL FOR BICENTENNIAL CONSTRUCTION N-4I

REGIONAL TRANSIT PLAN - COMPATIBLE WITH NETWORK N-4J

PERFORMANCE N-5A

ESTIMATED COSTS N-5A

QUALITY OF SERVICE N-5A

COMPARISON OF ALL BUS NETWORK VS. ALL FIXED GUIDEWAY NETWORK N-5

EVALUATION OF COMBINED BUS AND FIXED GUIDEWAY NETWORK N-5B

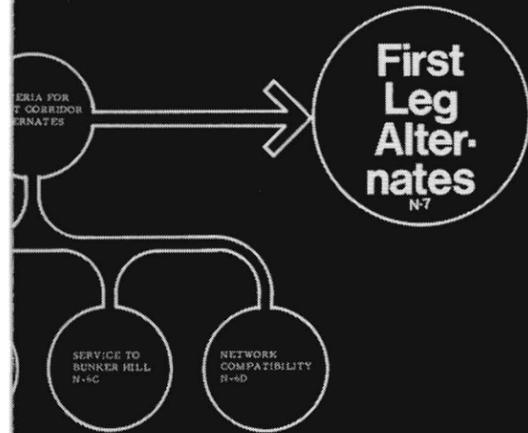
POTENTIAL ROUTES WITHIN CORRIDORS N-6A

IMMEDIATE SERVICE POTENTIAL N-6B

End of Network

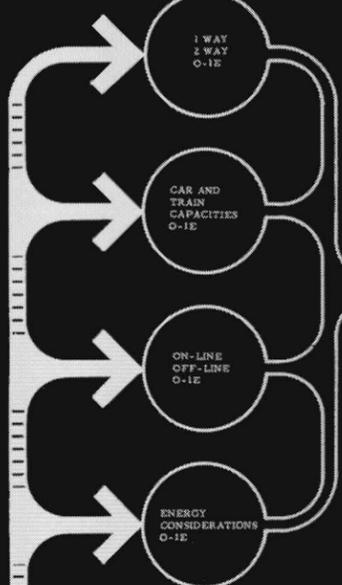
Overview Phase

Refinement Phase



Major Review

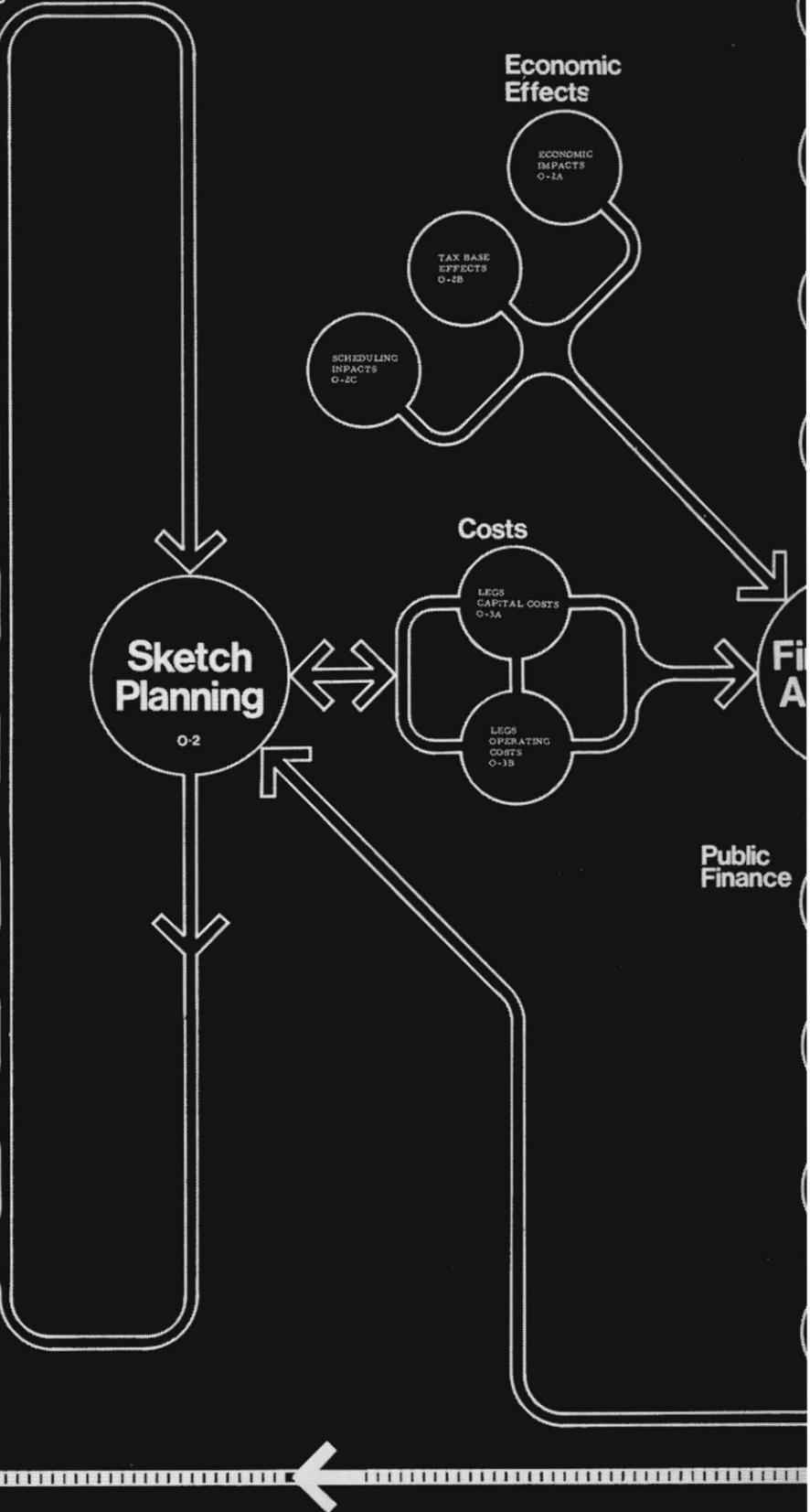
Generic Class Technology



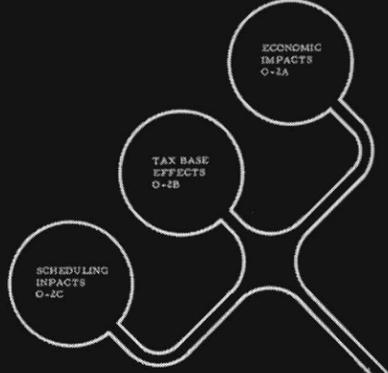
Design Considerations



Sketch Planning O-2



Economic Effects

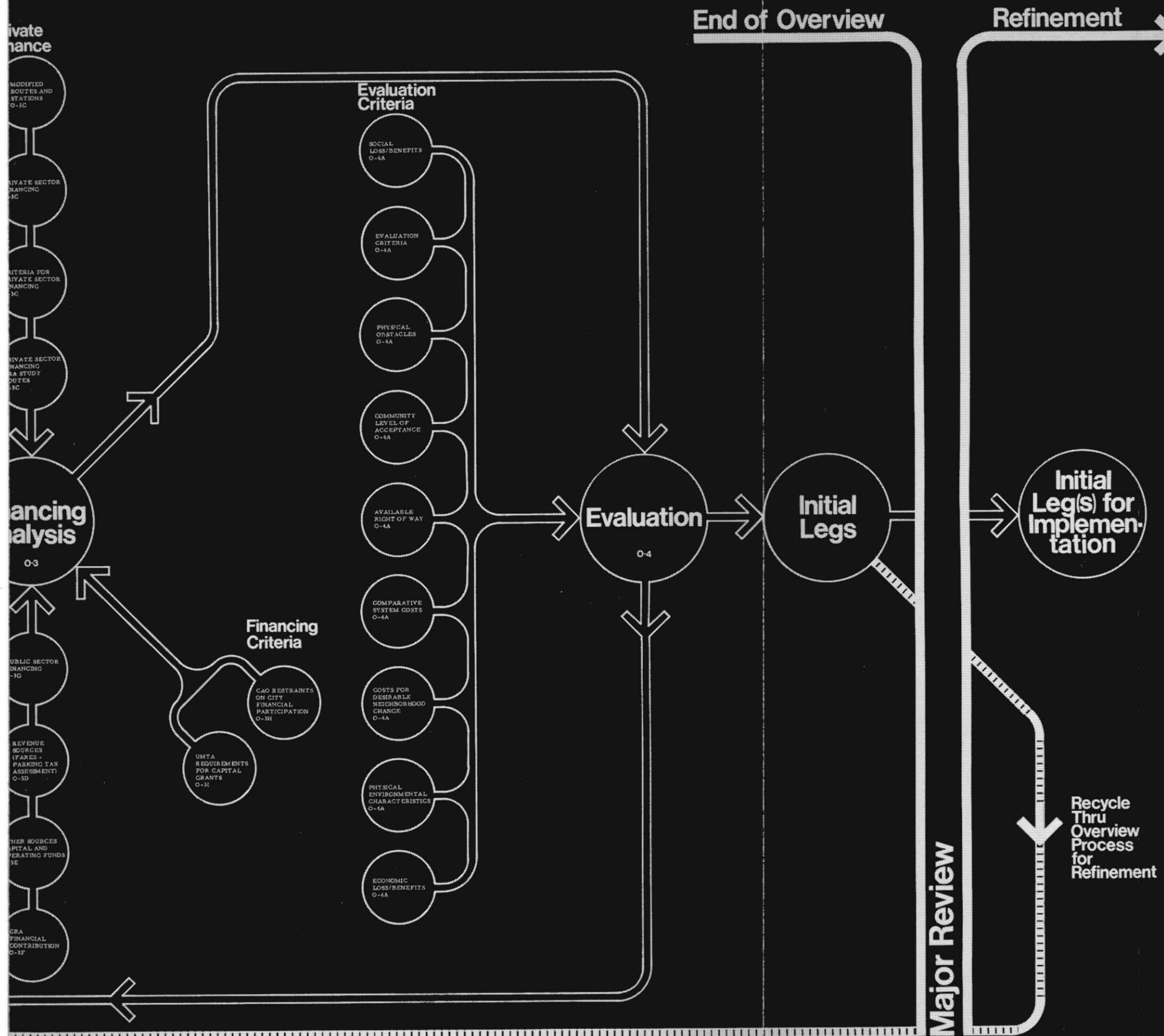


Costs



Public Finance

Fi A



CBD Bunker Hill People Mover System Work Flow Diagram

completion of any element of a fixed guideway system. Due to the long lead time of such construction it may be necessary that the initial increment comprise several elements of a potential system.

Important Issues

The Work Program identifies several subjects which deserve special comment, including some which are new to transportation planning:

MTD
SECTIONS
SP. INTEREST
& INPUT
R, SU

1. Transit Intercepts Along Freeway

The transfer from a freeway bus to a fixed guideway system with the option for the bus to continue along the freeway or return to its point of origin is a unique and probably previously untried design problem. Associated with this task are the items of intercept location, guideway access to the freeway, passenger transfer, bus and auto conflicts, and a myriad of details that are essential to a feasible alternative. It is anticipated that Cal-Trans will play a major role in accomplishment of this assignment.

2. Above Ground Guideway and Station Environmental Acceptance

Subway construction avoids the problems of guideway and vehicle compatibility with the existing environment. Above ground construction poses different problems for the residential and business community. Some preliminary work has been performed but this study will be the first serious effort to determine whether an above ground transit system can be constructed in Los Angeles. In addition to the physical problems, this task must consider community acceptance of multi-faceted intruding elements. Will the benefits of improved mobility be sufficient to warrant public acceptance? The Community Redevelopment Agency will arrange for community participation and direct the Project Task Force involvement in the dialogue. The Project Task Force will be responsible for the preparation of materials relating to proposals affecting the community.

3. Benefits of a Fixed Guideway Facility and Financial Resources

Accessibility is a valuable commodity to the business community and if a fixed guideway system provides clear cut tangible benefits, such can be the basis for assessments to defray capital and/or operating costs. This task will attempt to identify and quantify benefits to both the business and adjacent residential communities. There are many sources of financial support and a decision to construct a capital intensive system will lean heavily on the availability of funds for this purpose.

WALLEN ASSOCIATES
Transportation Consultants

RTO SECTIONS
SP. INTEREST & INPUT

4. Peripheral Parking Facilities

The question of whether to construct such facilities includes many issues of parking policy beyond the scope of this study. What is addressed are possible magnitudes of peripheral parking, site and community problems and solutions, and the relationship between peripheral parking and CBD transit requirements.

5. Bunker Hill Development and Parking Requirements

It was the Bunker Hill Urban Renewal Project and its requirement for 8,000 off-site parking spaces that initiated the concept of peripheral parking in Los Angeles. The CRA has decided to review the current development plan and develop up to three alternatives with different mixes of housing and commercial development. This task will address parking requirements for Bunker Hill, the need for off-site parking, and the potential of peripheral parking sites other than those previously investigated to satisfy Bunker Hill requirements.

The foregoing are indicative of some of the major questions addressed in the Work Program. The following is a detailed description of the proposed tasks.

Phase I - OVERVIEW

The work in this phase will be based upon available data. The input will be subjected to projection expertise evaluation and the analysis will be judgmental relative to the degree of data input. All graphic work will be done on maps of 1 inch equals 500 feet.

Phase IA - NETWORK (designated "N")

Step N-1. ESTABLISH SERVICE DEMAND

N-1A. Freeway bus to CBD - (The major portion of this work to be performed by Cal-Trans.)

1) Project the number of buses, persons and trips to the CBD for existing employment levels from a potential regional bus transit system on all the freeways contiguous to the CBD.

2) Same as 1) for employment levels as projected by Los Angeles Planning Department estimates for future CBD development.

SU, SE

RTU SECTIONS
SP INTEREST & INPUT

N-1B. CBD Peripheral Parking Potential - (Data from Wilbur Smith report and Parking Management Program).

1) Project the number of parking spaces outside the CBD required to capture a desirable percentage off the freeways without the necessity of entering the CBD.

N-1C. AMTRAK-CBD Potential.

1) Project the number of persons potentially entering the CBD via Union Station from an increased service to/from suburban areas that could be served by existing rail lines.

R, SE

N-1D. Potential Expanded Local Service to CBD.

1) Project number of persons and buses that could arrive in CBD via expanded local bus service.

SU, SE

2) Project number of persons to CBD via a Wilshire corridor transit system.

R, A

N-1E. Bunker Hill Transit and Parking Requirements - (Work to be done by CRA).

1) Develop alternate plans on Bunker Hill, not to exceed three levels of development expectation, to include the corresponding transit and parking requirements.

N-1F. Existing CBD Population Density and Distribution - (Partial data from L.A. City Planning Department).

1) Identify areas and number of persons, employment, entertainment, shopping, housing.

2) Identify areas of people interchange (employment-shopping, etc.).

N-1G. Existing CBD Street System Capacity for Auto and Bus Traffic - (L.A. Traffic).

1) Project street capacity for all regional bus system (see Freeway bus to CBD, N-1A) entering and distributing passengers in CBD with levels of existing autos.

SU, SE

2) Same except delete all other vehicles except buses and service vehicles.

SU, SE

3) Project as in 2 above with the exclusion of regional bus system into CBD.

RTD SECTIONS SP INTEREST & INPUT

SU, SE

4) Estimate potential modifications to traffic control and street sizes to accommodate each of the above.

N-1H. Existing CBD Parking Supply Location and Demand - (Wilbur Smith).

1) Identify all parking in the CBD and levels of usage per unit.

N-1I. L.A. City Future CBD Development - (L.A. City Planning Department).

1) Project overall L.A. CBD growth and planning policies.

2) Designate areas for desirable land use change and levels of density.

3) Indicate future special projects.

N-1J. Patron Inducement Policies - (Parking Management).

SE

1) Identify incentives to decrease auto VMT.

N-1K. 90 Day Study

1) Analyze and incorporate relevant data.

Step N-2. ALL BUS NETWORK. (EMANATES FROM SERVICE DEMAND.)

N-2A. Service Street Capability.

SU, SE

1) From Service Demand (N-1) estimate capability of all-bus network on city streets.

N-2B. Bus Capital and Operating Costs.

SU, SE

1) Estimate number and costs of buses needed to meet potential service demand from Service Demand (N-1).

SE

2) Estimate operating costs of all-bus network.

Step N-3. FIXED GUIDEWAY SYSTEM ROUTE FACTORS. (EMANATES FROM SERVICE DEMAND.)

N-3A. Transit Intercepts (Work performed with input from Cal-Trans).

SU, SE

1) Designate alternative approximate locations and sizes of transit intercepts - from Freeway bus to CBD (N-1A).

RTD SECTIONS SP INTEREST & INPUT

N-3B. Peripheral Parking (with Parking Management).

1) Designate alternative approximate locations and sizes of parking terminals from CBD Peripheral Parking Potential (N-1B).

N-3C. Access to Underutilized Existing Parking.

1) Designate locations of underutilized parking areas - from Existing CBD Parking Supply Location and Demand (N-1H).

N-3D. Activity Centers.

R, SE, A 1) Locate high activity centers for potential station locations - from Existing CBD Population Density and Distribution (N-1F).

N-3E. 90 Day Study.

1) Analyze and incorporate relevant data.

Step N-4. FIXED GUIDEWAY NETWORK - SLETCH PLAN ALTERNATIVES.

Develop alternate sketch plans indicating the relationship of the components of a fixed rail system incorporating the following:

N-4A. Capability to Accommodate Service Demand.

RD 1) The sketch plans shall consider the ultimate system compatible with the service demand generated from Service Demand (N-1).

N-4B. Location of Routes and Stations.

RD 1) Alternate route corridors and station locations from Service Demand (N-1).

N-4C. Technology.

RD 1) Assess existing technological systems for capacities, headways controls on-off line and 1 & 2 way travel.
2) Assess potential technological systems.

N-4D. Community Impacts.

1) Assess magnitude and nature of impact of fixed guideway system on residential and commercial neighborhoods.

RTO SECTIONS SP INTEREST & INPUT

N-4E. Assessment of Community Interests.

- 1) Identify interests in affected residential and business communities.
- 2) Identify attitudes toward fixed guideway system in affected communities.
- 3) Establish basis for future community participation in planning and review process.

N-4F. Capital and Operating Costs.

- R
- 1) Estimate the capital and operating costs of a fixed guideway system for comparative cost with all-bus system - from Bus Capital and Operating Costs (N-2B).

N-4G. Opportunities for Economic-Social Benefits.

- 1) Assessment of citizen benefit and loss in affected communities.
- 2) Assessment of economic and social benefit opportunities.
- 3) Assess potentials of private property assessment justified by system benefits.

N-4H. Potential System Expansion.

- R
- 1) Investigate the feasibility of the expansion of a fixed guideway system beyond the center city area.
 - 2) Consider the linkages of additional transit systems to center city other than previously designated in Service Demand (N-1).
- R, SE, A

N-4I. Potential for Incremental Construction.

- R
- 1) Identify segments of the network system that could be constructed in increments.

R

N-4J. Regional Transit Plan - Compatibility with Network.

Step N-5. COMPARISON OF ALL-BUS AND FIXED GUIDEWAY.

N-5A. Comparison of All-Bus Network Versus All Fixed Guideway Network.

- R, SU, SE
- 1) Compare the two systems for estimated costs, performance capability, quality of service.

RTD SECTIONS
SP INTEREST & INPUT

R, SU, SE

N-5B. Evaluation of Combined Bus and Fixed Guideway Network.

Step N-6. EVALUATION OF NETWORK FOR INITIAL CORRIDOR.

N-6A. Establish Criteria for Evaluation.

R

1) Potential routes within corridors with consideration of minimal cost factors and minimal negative impacts.

R, SE, A

2) Potential of immediate service demand - from Service Demand (N-1).

3) Service to Bunker Hill - potential of service demand - from Bunker Hill Transit and Parking Requirements (N-1E).

R, SU, SE

4) Compatibility of initial corridor with total network - from Location and Routes and Stations (N-4B) and Evaluation of Combined Bus and Fixed Guideway Stations (N-5B).

N-6B. Define First Corridor Alternates for Overview Study.

R

1) Analysis of criteria - from Comparison of All-Bus Network Versus All Fixed Guideway Network (N-5A) - to establish the first corridor alternates for Phase 1B overview.

Phase 1B - SELECTION OF ALTERNATIVES (designated "O")

This phase of the work will examine the components and issues on a broad scale. Available data will be utilized and required research will be conducted as necessary to develop sufficient information for utilization for a broad overview. All graphic work will be done on maps of 1 inch equals 200 feet.

Step O-1. ESTABLISH DESIGN CRITERIA FOR FIXED GUIDEWAY COMPONENTS.

O-1A. Engineering Restraints.

1) Identify legal and physical restraints.

2) Provide cost estimates to resolve restraints.

O-1B. Regional Transit Intercepts.

SU, SE

1) Extend work from Transit Intercepts (N-3A) to develop sufficient detail for number, sizes and locations of regional bus intercepts.

RTO SECTIONS
SP INTEREST & INPUT

O-1C. Planning - Land Use.

- 1) Extend work from Existing CBD Population Density and Distribution (N-1F) and L.A. City Future CBD Development (N-1I).
- 2) Review community plans and objectives related to study area. (Data from L.A. Planning Department)
- 3) Identify areas of concentrated land use.
- 4) Establish levels of desirable densities as potential land use changes.

O-1D. Peripheral Parking Terminals.

- 1) Extend work from CBD Peripheral Parking Potential (N-1B), Bunker Hill Transit and Parking Requirements (N-1E), Existing CBD Parking Supply Location and Demand (N-1H), and Patron Inducement Policies (N-1J) to develop sufficient detail for number, sizes and locations of parking terminals.
- 2) Same as 1 with consideration of transit intercept within parking terminals.

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O-1E. Generic Class of Technology - System Capacity.

- 1) Extend the work from Assessment of Community Interests (N-4E).
- 2) Consider on-line, off-line systems.
- 3) Consider one-way, two-way systems.
- 4) Evaluate car and train capacities from above considerations.
- 5) Energy considerations.

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O-1F. Transit - Physical Criteria - from Generic Class of Technology System Capacity (O-1E).

- 1) Station sizes.
- 2) Storage and maintenance facility sizes.
- 3) Elevated and sub-surface envelope size.
- 4) Movement criteria, turning radius, gradients.
- 5) Noise factors related to traction.

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RTO SECTIONS SP INTEREST & INPUT

R 6) Energy factors.

O-1G. Urban Design.

Identify:

- 1) District boundaries by characteristics.
- 2) Pedestrian circulation and intensities.
- 3) Views.
- 4) Significant landmarks including historic sites.
- 5) Activity centers and linkage opportunities.
- 6) Open space.

O-1H. Physical Environment

- 1) Identify natural features including contours, significant landscape, flood channels and geologic and seismic hazardous areas.
- 2) Identify health factors including noise contours and air pollution.

O-1I. Community Factors

- 1) Extend the work of Assessment of Community Interests (N-4E).
- 2) Identification of residential neighborhoods by location and character.
- 3) Identify community facilities including schools, parks, churches, libraries, police and fire stations and commercial services.

O-1J. Social Concerns.

- 1) Identify employment areas.
- 2) Identify areas for potential community benefits, i.e., housing, community and health care centers, etc.

Step O-2. ALTERNATE ROUTE SKETCH PLANNING.

R, SU, SE Develop all transit components including transit intercepts, parking terminals, route paths, stations and storage maintenance facilities.

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RTD SECTIONS SP INTEREST & INPUT

O-2A. Economic Impacts.

- 1) From sketch plan alternates, identify the spheres of impact from stations or route locations.
- 2) Indicate the direction and magnitude of the economic impact (benefits and losses) on existing properties, structures, and major interest groups.
- 3) Indicate types of land uses that might be generated by stations.

O-2B. Tax Base Effects.

- 1) From Economic Impacts (O-2A) assess the tax base liabilities/benefits to the City. (Task by C.A.O. office)

O-2C. Scheduling Impacts.

- 1) Estimate time frame from commitment to build initial leg to completion of construction.
- 2) Assess impacts of time schedule.

Step O-3. FINANCIAL ANALYSIS.

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From Alternate Route Sketch Planning (O-2) provide financial analysis of alternate legs of fixed guideway legs.

O-3A. Capital Costs.

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- 1) Estimate the costs of engineering and construction of all of the components of the fixed guideway system including land purchase, relocation structures, access routes and equipment purchase.

O-3B. Operating Costs.

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- 1) Estimate the costs of operating the system including maintenance and management.

O-3C. Private Sector Financing.

- 1) Develop pro forma preliminary analysis and conclusions related to private financing, development and management of a fixed guideway leg including peripheral parking.
- 2) Analysis and conclusion of alternate legs from Alternate Route Sketch Planning (O-2) for feasibility of private financing, development and management.

RTD SECTIONS SP INTEREST & INPUT

3) Analysis and conclusion as to what portion of any alternate route or modification thereof would appear to be feasible for private financing, development and management.

0-3D. Revenue Sources - Public Sector.

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1) Estimate sources of revenue from operation of fixed guideway system including fares, parking moneys, advertising, etc.

0-3E. Other Sources of Capital and Operating Funds.

1) C.A.O. shall establish criteria for eligibility of benefits beyond Bunker Hill Redevelopment Agency.

2) C.A.O. shall determine the eligibility and nature of funding sources, i.e., gasoline tax moneys, etc.

3) C.A.O. shall assist in the establishment of funding policies.

R, SE

4) Prepare pro forma financial analysis illustrating methods of financing construction and operation of a publicly financed system including private property assessments and opportunities derived from system benefits. (Extend work from Economic Impacts,)-2A.)

0-3F. CRA Financial Contribution.

1) Assess the amount of funds available from the Community Redevelopment Agency for use in the implementation of the system.

0-3G. C.A.O. Financial Restraints.

1) Establish all financial restraints for L.A. City financial participation for capital and operating funds.

0-3H. UMTA Requirements for Capital Grants.

R, SE

1) Establish the criteria for the system necessary to qualify for federal Urban Mass Transit funds.

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2) Estimate the amount of subsidy moneys available for capital and operating costs for the system.

Step 0-4. EVALUATION OF ALTERNATIVES.

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0-4A. Establish Criteria for Evaluation for the Following:

RTO SECTIONS SP INTEREST & INPUT

R, SE

- 1) Quality of service.
- 2) Community level of acceptance.
- 3) Physical obstacles.
- 4) Economic loss/benefits.
- 5) Social loss benefits.
- 6) Costs for desirable or remedial neighborhood change.
- 7) Comparative system costs.
- 8) Available right-of-ways.

Step 0-5. DEFINE INITIAL LEGS FOR REFINEMENT STUDY.

From Evaluation of Alternatives (0-4) submit all reports, maps, evaluation analysis and recommendations to the CRA, community groups and Policy Review Group for selection of the initial increment of leg or legs to be submitted to study refinement.

PHASE 2 - REFINEMENT OF INITIAL LEGS

This phase of the work will repeat the work of the overview phase at a refined scale. The components and issues will be examined in sufficient detail to establish the feasibility of implementing an initial leg of a fixed guideway system. All detailed graphic work will be done on maps of 1 inch equals 40 feet.

Two areas of work shall be significantly increased in task definition as follows:

Social Concerns (0-1J)

- 1) Identify displacement and/or disruption of neighborhoods and/or communities including housing, community facilities, commercial services, employment, noise and air pollution, and city services.
- 2) Identify any effect on disadvantaged populace including ethnic, aged, handicapped.
- 3) Develop plans and strategies with affected communities to ascertain beneficial measures that will minimize and offset any impacts identified by the study.

Economic Impacts (O-2A)

- 1) Prepare an economic inventory of existing conditions of neighborhoods and areas of CBD that will be directly impacted by the fixed guideway system. The inventory shall include the following:
 - a) Land Use
 - b) Zoning
 - c) Parcelization
 - d) Ownership
 - e) Assessed values of land and buildings
 - f) District boundaries by characteristics (use and neighborhoods)
 - g) Available employment/population/dwelling unit data by block
 - h) Building coverage and condition
 - k) Current and planned private or public construction activity

- 2) Identify for sketch planning, routes and station locations of least resistance based upon site availability, parcelization patterns, ownership characteristics, real estate costs, and relocation requirements and costs.

6. ORGANIZATIONAL STRUCTURE, PARTICIPATING AGENCIES, PROJECT MANAGEMENT

It is proposed that the CRA, other public agencies, and the communities most directly involved in the impact of a people mover system be a part of the study process. The nature of this study and the potential significance of the results suggest that public agencies be direct participants in the work, as shown in the plate, Organizational Structure, rather than be limited to review of the work of the consultants which is the customary procedure.

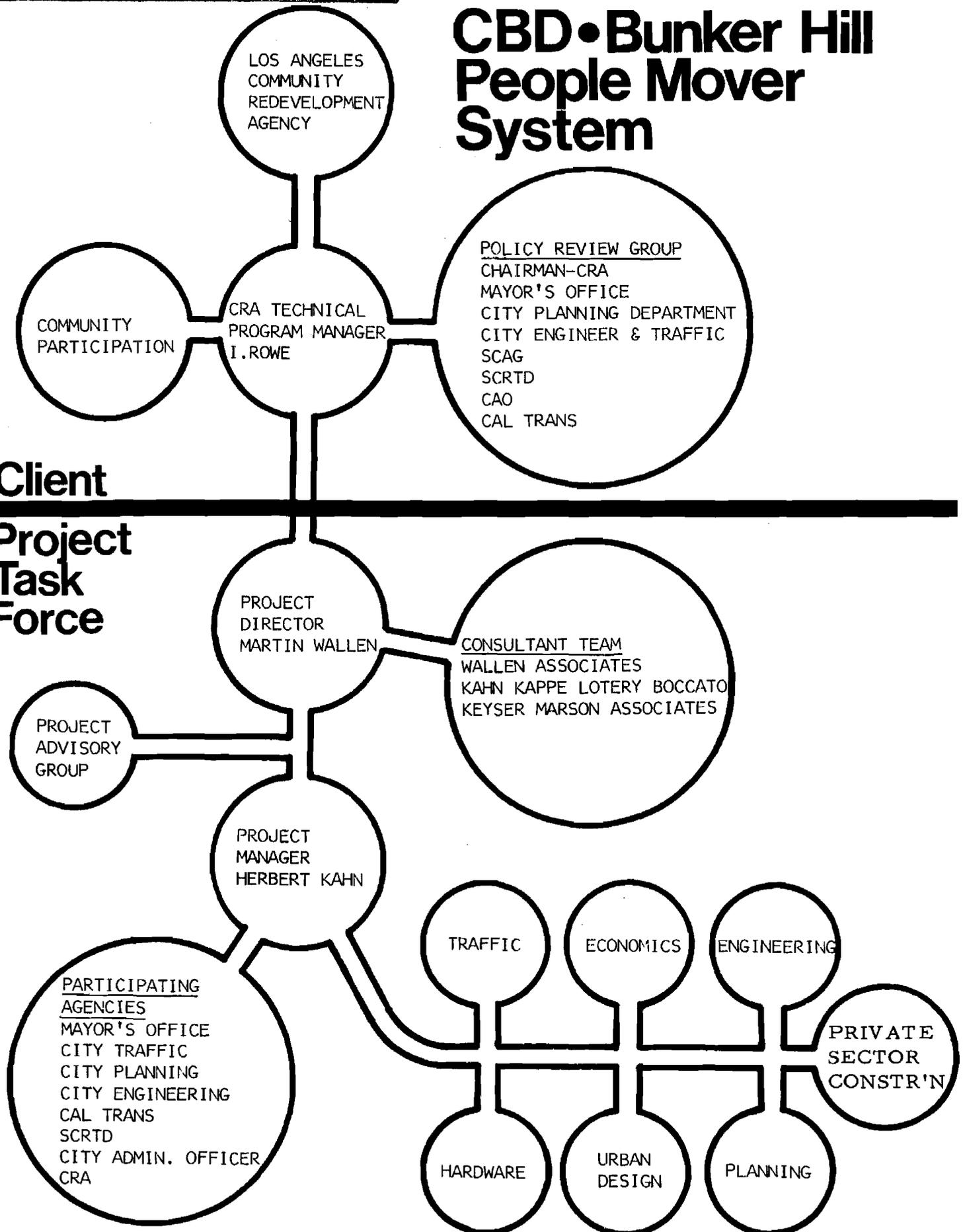
1. Community - CRA to identify people and issues in the community and arrange for interested citizen participation in policy preparation.
2. Policy Review Group - The major function of this group would be to review the work at the critical stages, particularly the conceptual networks, selection of alternatives for evaluation, and implementation program. Additional meetings may be held to review the work progress. It would be the responsibility of the CRA to organize this group.
3. Technical Advisory Group - It is suggested that funding be provided for an advisory group of about five persons renowned in the fields of public administration, urban development, transportation planning and finance to assist in the identification of key issues and provide assurance that the work being performed is that required for decision making. Several persons have indicated an interest in serving and final selection would be made in conjunction with the CRA.
4. Direct Participants To Study - At least seven groups in addition to the CRA have been identified that can make substantial contributions to the study and through their participation assist in achieving agreement on an implementation program or no build decision. Prior to start of work the CRA and consultants should agree on a final list of participating agencies and the work they will perform.
 - a) Mayor's Office - Parking Management Program, expression of requirements of this office.
 - b) City Administrative Officer - Funding policy, eligibility of funding sources, review of financial and economic aspects of proposal.
 - c) City Traffic Engineer - Existing and projected street traffic, bus alternative on city streets, feasibility of restricted auto and auto free concepts.

INITIATIVE

CBD • Bunker Hill People Mover System

Client

Project Task Force



Organizational Structure

- d) City Planning - Transit impact on land use change.
- e) City Engineer - Identification of right-of-way restraints and resolution of right-of-way conflicts.
- f) CRA - Provision of all required input data, alternate plans and parking requirements for Bunker Hill.
- g) Cal Trans - Transit intercepts, regional bus assignments to people mover and all-bus systems, parking structures over freeway, fixed guideway use of freeway right-of-way.

5. Data To Be Furnished By CRA - In order to comply with the limited time available for the study and keep the outside costs to a minimum, it is agreed that the CRA will accumulate and furnish the base data required by the consultants. The data will include, but not be limited to, the following:

Phase 1 Base - For the entire study area furnish aerial photographs and corresponding scale transparent overlay maps with all existing physical development and 5 foot interval contours, at a scale of 1 inch equals 500 feet and 1 inch equals 200 feet.

Phase 2 Base - For refinement study areas to be determined at a later date, furnish aerial photographs and corresponding scale maps similar to above at a scale of 1 inch equals 40 feet.

Phase 1 Data - For entire study area furnish:

1. All 1970 census data by census tract.
2. All available data for population distribution day and night by block (if possible), and by purpose, i.e., employment, retail and services, cultural and religious and recreational.
3. All data from 90 Day Study.
4. Alternate development plans for all of the Bunker Hill Redevelopment area (not more than 3).
5. All data on local bus service.
6. All data on seismic safety, open space, conservation, noise, and safety elements of the General Plan.

Phase 2 Data - For areas to be subjected to refined study and identified prior to starting Phase 2 work.

1. All 1970 census data by neighborhood.
2. Economic inventory to include:
 - a) Land use
 - b) Zoning
 - c) Parcelization
 - d) ownership
 - e) Assessed values of land and buildings
 - f) Building coverage and condition
 - g) Current and planned private or public construction activity

6. Project Management - The consultants management team is shown on the plate, Organizational Structure. Martin Wallen will be responsible for client coordination, policy and certain technical assignments. Herbert Kahn will direct the planning and urban design activity and be responsible for day to day coordination of the work. Economic investigations will be under the direction of Jerry Keyser. Information on small vehicle technology such as operational characteristics, system requirements and costs, fixed guideway design criteria and costs will be secured from specialists with demonstrated experience in this type of work. All members of the team will simultaneously participate in the sketch planning process so that previous experience can be shared and redundancy kept to a minimum.

All work relating to private financing, development and management of any elements of a people mover, peripheral parking and horizontal elevator system will be performed under a special subcontract to Noxon Associates in conjunction with Westinghouse Electric Corporation.

7. TIME SCHEDULE AND FEE

The work described herein can be completed in the desired period of six months, given the cooperation of all parties and the active support of the Community Redevelopment Agency.

This work statement has been substantially expanded from that of December 24, 1974 and a firm fee schedule is dependent on agreement to the revisions and the extent of work to be performed by the participating agencies.

8. KEY PERSONNEL

WALLEN ASSOCIATES

Transportation Consultants

Martin A. Wallen - Project Director

University of California, B.S. Civil Engineering
Yale University, Certificate in Highway Traffic

Registered Civil Engineer - California

Member: Highway Research Board
Transportation Research Forum
Institute of Traffic Engineers
(Chairman, San Francisco Bay Area, 1964-65)
American Society of Civil Engineers

Professional Experience

Over 20 years with government agencies, large consulting organizations and as individual consultant in...transportation management and planning, and as transportation specialist on interdisciplinary team...transit planning and operations...street and highway planning, location and design...financing and public understanding and acceptance of transportation improvements...all phases of municipal traffic engineering, street lighting and off-street parking.

Recent Project Work

Prepared study design of updating central business district land use and transportation plan which included feasibility of fixed guideway people mover system for City of San Diego.

Action Plan (PPM-4) for State of Montana Department of Highways. Process for inclusion of economic, social and environmental considerations and public involvement in the planning, design and construction of transportation projects.

All aspects of ground transportation for proposed new international airport in Bangkok, Thailand.

Agreement of location and design of crosstown freeway (US 101) in Santa Barbara, California. Traffic, parking and transit aspects of 800 acre central city redevelopment project, including economic and social significance of alternate fixed guideway people mover systems and other forms of internal circulation.

Consultant to City of Santa Barbara and State of California in the preparation and processing of Environmental Impact Statement

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for proposed multimodal Crosstown Transportation Corridor project.

Technical and administrative consultant in current development of Auxiliary Transit and Satellite Parking System...project cost and feasibility, planning and engineering management program, traffic access and garage design, interagency liaison for City of Los Angeles Redevelopment Agency.

Project manager of studies relating to municipal acquisition of transit system and expansion of service in Portland, Oregon. Work resulted in establishment of Tri-County Metropolitan Transportation District.

Traffic and transit requirements for new 12,000 room hotel resort community of Wailea, Hawaii, and either expansion or creation of new resorts at Big Sky, Montana; Stratton Mountain, Vermont; Sun Valley, Idaho and Snowmass, Colorado.

Design of study for Legislative Transportation Committee investigation of alternate technological transportation systems, applicable to specific corridors for the State of Washington.

KAHN KAPPE LOTERY BOCCATO

The architectural planning firm of Kahn Kappe Lotery was formed in 1968. Prior to that date, the three principals had successful individual private practices for over ten years. Clelio Boccato, an associate of the firm for many years, became a partner in 1974.

The firm's experience has encompassed a wide range of diverse planning activities. These include recreational, open space, redevelopment, housing, public transportation, new town planning, university programming and planning, cultural facilities, and commercial and industrial site planning.

The firm has served both public and private clients that include the County of Los Angeles, the cities of Los Angeles, Inglewood, San Clemente, Compton, and the Lockheed Company, Tasker Industries, V.A.I. Corporation and Loyola Marymount University.

The firm's building design experience has included residential, commercial, civic and industrial development. The firm has extensive experience in civic buildings including a community fire station, art center, police station, schools, and recreation buildings. The firm has received numerous local and national awards for its excellence in design.

Herbert Kahn, AIA, Associate AIP
Project Manager

Mr. Kahn is an architect and planner with over 20 years of experience in environmental planning. Mr. Kahn has been a partner in the firm of Kahn Kappe Lotery since its founding in 1968. Prior to that, he was a partner in the architectural planning firm of Kahn, Farrell and Associates.

He has served as project director for the firm's planning studies which have included:

- * Charmlee Regional Park - a 45 acre park in Malibu for the County of Los Angeles
- * Open Space and Conservation Plan for the City of San Clemente
- * Morningside Business District Rehabilitation Plan, City of Inglewood
- * In-Town Redevelopment Study, City of Inglewood
- * Master Plan, Barnsdall Park Art Center, City of Los Angeles
- * Master Plan, Inglewood Industrial Area
- * Master Plan, Inglewood City Service Center
- * Master Plan, Compton City Service Center

KEYSER MARSTON ASSOCIATES

Keyser Marston Associates is a professional consulting firm established to provide services to public and private sector clients in the areas of land economics, real estate market and financial analysis, and public regulatory policy affecting the use, development and redevelopment of land resources. Specific services to the public sector include: Land use market and feasibility studies, economic base analysis, and consulting in the disposition of renewal lands.

A. Jerry Keyser and Michael Marston, the partners of the firm, have a combined total of over twenty years experience as economic and redevelopment consultants, and were the principals of the urban economics division of a major national consulting firm before establishing their own practice. The partners have served as advisors on numerous projects from initial project planning through project implementation.

A. Jerry Keyser

Project Manager for Keyser Marston Associates

Academic Background

Master's Degree, Real Estate and Financing, Columbia University Graduate School of Business; Undergraduate Degree, Political Science and Economics, Cornell University.

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Professional Experience

Mr. Keyser was the former Vice President and Member of the Board, Larry Smith and Company, Inc.; and President, Urban Economics Division of Larry Smith and Company, Inc., San Francisco, California. Mr. Keyser is a Director of the California Information Center for Community Development. He is a former Member of the Board and Chairman of the Planning Committee for the San Francisco Planning and Urban Renewal Association (SPUR). He is also a member of the National Association of Housing and Redevelopment Officials, and an officer of the Land Executives Association. He has been a guest lecturer on Urban Economics at the University of California, Berkeley; at Merritt College, Oakland; and at California State University at Sacramento.

Representative Current and Previous Assignments

Economic, Housing, and growth policy analyses for public clients including:

- * Economic/marketing consulting for the Community Redevelopment Agency of the City of Los Angeles, Bunker Hill Urban Renewal Project
- * Economic/marketing consulting for the Community Redevelopment Agency of the City of Pasadena, Downtown Redevelopment Project.
- * Economic/marketing consulting for the City and Redevelopment Agency of the City of San Diego, Centre City and Horton Plaza.
- * Socio-Economic Impact Analysis of the Proposed Regional Transportation Plan for the nine counties of the San Francisco Bay Area.
- * Fiscal and Economic Impact Analysis of Intensive, High Rise Commercial Development in San Francisco.
- * Economic and Fiscal Analysis pertinent to the Comprehensive Plan, and Environmental Assessment Report for relocation of the City of North Bonneville, Washington necessitated by new Bonneville Dam construction.
- * Redevelopment marketing, disposition consultation, fiscal impact and growth policy evaluations have been undertaken or are ongoing in other California communities.