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SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
CA-03-0130-04

AMENDMENT REQUEST

SUBMITTED: FEBRUARY 18, 1983
APPROVED: APRIL 1, 1983



John A. Dyer
General Manager

FEB 18 1983

Ms. Brigid Hynes-Cherin
Regional Director
Urban Mass Transportation Administration
Two Embarcadero Center, Suite 620
San Francisco, California 94111

Dear Ms. Hynes-Cherin:

Amendment Request
Metro Rail Continuing Preliminary Engineering
CA-03-0130-04

This letter transmits to you the Southern California Rapid Transit District's request for an amendment of \$25 million in Federal dollars for the Metro Rail Project utilizing funds from Section 3 of the Urban Mass Transportation Act of 1964, as amended. Local match funds will be provided from SB 620 allocations and Prop 5 gas tax revenue.

The proposed amendment includes continued preliminary engineering and design work on ten proposed stations and related tunnel sections of the alignment. In order to make a final decision regarding the design and construction of the Metro Rail Project, it is desirable to have the maximum amount of design information available. Thus, to insure that cost estimates can be made with greater accuracy, it is important that the District continue to proceed with Preliminary Engineering. (For a full description and justification, please see the enclosed work program.)

To assist you in processing this amendment request, the following items are included:

- Updated Form 424
- Board Resolution
- Updated Opinion of Counsel
- Budget Information Part III
- Current Approved Budget
- Proposed Budget
- Project Description and Justification

Ms. Hynes-Cherin
Amendment Request
CA-03-0130-04

-2-

All exhibits, certifications and assurances transmitted in the original project application are herein incorporated as part of this amendment request. The transcript of the Public Hearing held on February 10, 1983 is forthcoming.

If you require additional information or have any further questions concerning this amendment request, please let us know.

Sincerely,

A handwritten signature in black ink, appearing to read "John A. Dyer", with a long horizontal flourish extending to the right.

John A. Dyer

Enclosures



RTD

John A. Dyer
General Manager

CERTIFICATION

I hereby certify that, effective upon execution of the grant contract incidental to CA-03-0130 the Southern California Rapid Transit District will not engage in charter bus operations outside of the area within which regularly scheduled mass transportation service is provided. I further certify that the Southern California Rapid Transit District will not engage in school bus operations, exclusively for the transportation of students and school personnel, in competition with private school bus operators.

I understand that a violation of either provision will preclude the Southern California Rapid Transit District from receiving any other financial assistance under:

- (1) subsection (a) or (c) of Section 142, Title 23, United States Code;
- (2) paragraph (4) of subsection (e) of Section 103, Title 23, United States Code; or
- (3) The Urban Mass Transportation Act of 1964.

The terms of this certification shall be applicable for so long as, and only to the extent that the Federal law requires the inclusion thereof, and upon enactment of any law which eliminates the prohibition, then this certification shall be deemed amended accordingly.


John A. Dyer
General Manager

2/16/83
Date

FEDERAL ASSISTANCE

1. TYPE OF ACTION
 PREAPPLICATION
 APPLICATION
 NOTIFICATION OF INTENT (Opt.)
 REPORT OF FEDERAL ACTION
(Mark appropriate box)

2. APPLICANT'S APPLICATION

a. NUMBER
 b. DATE Year month day
 19

3. STATE APPLICATION IDENTIFIER

a. NUMBER
 b. DATE Year month day
 ASSIGNED 19

4. LEGAL AFFILIANT/RECIPIENT
 Applicant Name : Southern California Rapid Transit District
 Organization Unit : Grants Administration
 Street/P.O. Box : 425 South Main Street
 City : Los Angeles County : Los Angeles
 State : California ZIP Code: 90013
 Contact Person (Name & telephone No.) : George Kagawa (213) 972-6628

5. FEDERAL EMPLOYER IDENTIFICATION NO. 95-1978576
 6. PROGRAM (From Federal Catalog)
 a. NUMBER 2005000
 b. TITLE Urban Mass Transportation Capital Improvements

7. TITLE AND DESCRIPTION OF APPLICANT'S PROJECT
 Metro Rail Continuation of Preliminary Engineering

8. TYPE OF APPLICANT/RECIPIENT
 A-State H-Community Action Agency
 B-Interstate I-Higher Educational Institution
 C-Substate District J-Indian Tribe
 D-County K-Other (Specify): Transit District
 E-City
 F-School District
 G-Special Purpose District
 Enter appropriate letter K

9. TYPE OF ASSISTANCE
 A-Basic Grant D-Insurance
 B-Supplemental Grant E-Other Enter appropriate letter(s) A
 C-Loan

10. AREA OF PROJECT IMPACT (Names of cities, counties, States, etc.)
 Los Angeles County

11. ESTIMATED NUMBER OF PERSONS BENEFITING
 7,000,000

12. TYPE OF APPLICATION
 A-New C-Revision E-Augmentation
 B-Renewal D-Continuation
 Enter appropriate letter E

13. PROPOSED FUNDING

a. FEDERAL	\$ 25,000,000 .00
b. APPLICANT	8,333,000 .00
STATE	.00
c. LOCAL	.00
OTHER	.00
TOTAL	\$ 33,333,000 .00

14. CONGRESSIONAL DISTRICTS OF:
 a. APPLICANT 20-35
 b. PROJECT 20-35

16. PROJECT START DATE Year month day
 19 82 10 01

17. PROJECT DURATION Months

18. ESTIMATED DATE TO BE SUBMITTED TO FEDERAL AGENCY Year month day
 19 83 02 21

15. TYPE OF CHANGE (For 15c or 15e)
 A-Increase Dollars F-Other (Specify):
 B-Decrease Dollars
 C-Increase Duration
 D-Decrease Duration
 E-Cancellation
 Enter appropriate letter(s) A

19. EXISTING FEDERAL IDENTIFICATION NUMBER
 CA-03-0130

20. FEDERAL AGENCY TO RECEIVE REQUEST (Name, City, State, ZIP code)
 Urban Mass Transportation Administration, San Francisco, CA 94111

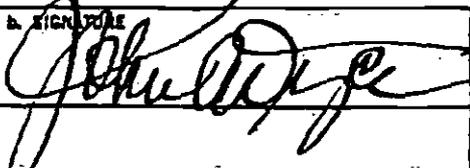
21. REMARKS ADDED
 Yes No

22. THE APPLICANT CERTIFIES THAT
 a. To the best of my knowledge and belief, data in this preapplication/application are true and correct, the document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurances if the assistance is approved.

b. If required by OMB Circular A-95 this application was submitted, pursuant to instructions therein, to appropriate clearinghouses and all responses are attached: None Response attached

(1) Southern California Assoc. of Governments
 (2) Los Angeles County Transportation Comm.
 (3)

23. CERTIFYING REPRESENTATIVE
 a. TYPED NAME AND TITLE
 John A. Dyer
 General Manager

b. SIGNATURE


c. DATE SIGNED Year month day
 19 83 2 16

24. AGENCY NAME

25. APPLICATION RECEIVED Year month day
 19

26. ORGANIZATIONAL UNIT

27. ADMINISTRATIVE OFFICE

28. FEDERAL APPLICATION IDENTIFICATION

29. ADDRESS

30. FEDERAL GRANT IDENTIFICATION

31. ACTION TAKEN

<input type="checkbox"/> a. AWARDED	32. FUNDING
<input type="checkbox"/> b. REJECTED	a. FEDERAL \$.00
<input type="checkbox"/> c. RETURNED FOR AMENDMENT	b. APPLICANT .00
<input type="checkbox"/> d. DEFERRED	c. STATE .00
<input type="checkbox"/> e. WITHDRAWN	d. LOCAL .00
	e. OTHER .00
	f. TOTAL \$.00

33. ACTION DATE Year month day
 19

34. STARTING DATE Year month day
 19

35. CONTACT FOR ADDITIONAL INFORMATION (Name and telephone number)

36. ENDING DATE Year month day
 19

37. REMARKS ADDED
 Yes No

FEDERAL AGENCY A-95 ACTION
 a. In taking above action, any comments received from clearinghouses were considered. If agency response is due under provisions of Part 1, OMB Circular A-95, it has been or is being made.

b. FEDERAL AGENCY A-95 OFFICIAL (Name and telephone no.)



RTD

Richard T. Powers
General Counsel

February 9, 1983

TO: John A. Dyer, General Manager
FROM: Richard T. Powers, General Counsel
SUBJECT: Amendment to UMTA Capital Grant Project No. CA-03-0130

This opinion is written by the undersigned in his capacity as General Counsel of the Southern California Rapid Transit District.

The District is legally empowered and authorized to prepare and file with the Department of Transportation applications or other documents deemed necessary for the planning, improvement, or operation of its transit facilities.

There is no pending or threatened litigation which might in any way adversely affect any proposed capital improvement or planning programs, and there is no legal impediment to your making this application.

A handwritten signature in cursive script, reading "Richard T. Powers", is positioned above the typed name.

Richard T. Powers
General Counsel

PART III - BUDGET INFORMATION
Page 1

OAR NO. 00 00 100

SECTION A - BUDGET SUMMARY

Grant Program, Function or Activity (a)	Federal Catalog No. (b)	Estimated/Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Capital	20.500	\$	\$	\$	\$	\$
2.	Current Budget			46,074,400	11,518,600	57,593,000
3.	Proposed Amend			25,000,000	8,333,000	33,333,000
4.						
5. TOTALS		\$	\$	\$71,074,400	\$ 19,851,600	\$ 90,926,000

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	Grant Program, Function or Activity				Total (5)
	(1)	(2) Current	(3) Proposed	(4)	
a. Personnel	\$	\$ 13,766,000	\$ 2,150,000	\$	\$ 15,916,000
b. Fringe Benefits					
c. Travel					
d. Equipment		40,000	800,000		840,000
e. Supplies		900,000	(100,000)		800,000
f. Contractual		40,958,000	27,200,000		68,158,000
g. Construction					
h. Other		1,737,000	3,150,000		4,887,000
i. Total Direct Charges					
j. Indirect Charges		192,000	133,000		325,000
k. TOTALS	\$	\$ 57,593,000	\$ 33,333,000	\$	\$ 90,926,000
7. Program Income	\$	\$ -0-	\$ -0-	\$	\$ -0-

Capital Grant Project No.: CA-03-0130-3
 Grantee: Southern California Rapid Transit District

Project budget items and corresponding cost estimates are as follows:

<u>Project Budget Line Item Code</u>	<u>Description</u>	<u>Amount</u>
20.02.01	Purchase of five support vehicles	\$ 40,000
20.02.02	Purchase and install support equipment	900,000
20.08.01	Professional services contracts for engineering and design	40,958,000
20.15.02	Project sponsor force account work	13,766,000
20.16.00	Cost allocation plan - G & A	192,000
20.16.90	Other supporting services	700,000
32.00.00	Contingencies	<u>1,037,000</u>

APPROVED FINANCING

	ESTIMATED GROSS PROJECT COST	\$57,593,000
41.00.00	Revenue Financing	<u>-0-</u>
	ESTIMATED NET PROJECT COST	\$57,593,000

Federal Share (80%) \$46,074,400

Local Share (20%) 11,518,600

<u>Program Code</u>	<u>Year</u>	<u>Fund Code</u>	<u>Description</u>	<u>Amount</u>
31.10.30	FY 80	BRA	Urban Discretionary, New Starts	\$12,000,000
31.10.30	FY 82	CH2	Urban Discretionary, New Starts	<u>34,074,400</u>

Maximum UMTA grant funds committed to this project: \$46,074,400

PROPOSED PROJECT BUDGET

Capital Grant Project No.: CA-03-0130

Grantee: Southern California Rapid Transit District

Project budget items and corresponding cost estimates are as follows:

<u>Project Budget Line Item Code</u>	<u>Description</u>	<u>Amount</u>
20.02.01	Purchase of five support vehicles	\$ 40,000
20.02.02	Purchase and install support equipment	800,000
20.02.07	Purchase and install MIS equipment	700,000
20.02.08	Purchase and install communications equipment	100,000
20.08.01	Professional services contracts for engineering and design	68,158,000
20.15.02	Project sponsor force account work	15,916,000
20.16.00	Cost allocation plan - G & A	325,000
20.16.90	Other supporting services	2,350,000
32.00.00	Contingencies	<u>2,537,000</u>

APPROVED FINANCING

	ESTIMATED GROSS PROJECT COST	\$90,926,000
41.00.00	Revenue Financing	<u>-0-</u>
	ESTIMATED NET PROJECT COST	\$90,926,000

	Federal Share (80%)	\$46,074,400
	(75%)	<u>25,000,000</u>
TOTAL FEDERAL SHARE		\$71,074,400

	Local Share (20%)	\$11,518,600
	(25%)	<u>8,333,000</u>
TOTAL LOCAL SHARE		\$19,851,600

RESOLUTION NO. R-83-006

Resolution authorizing the filing of an amendment to a grant application with the Department of Transportation, United States of America, for funding of continuing preliminary engineering under the Urban Mass Transportation Act of 1964 as amended.

WHEREAS, the Secretary of Transportation is authorized to make grants for mass transportation projects; and

WHEREAS, with financial assistance from the U.S. Department of Transportation, the California Department of Transportation, and the Los Angeles County Transportation Commission, the District has been undertaking preliminary engineering work on the Metro Rail Project; and

WHEREAS, the Congress of the United States has authorized \$25 million of additional funds for the continuation of preliminary engineering; and

WHEREAS, the additional contract financial assistance will impose certain additional obligations upon the applicant, including the provision by it of the local share of project costs, for which applications are being filed concurrently; and

WHEREAS, it is required by the U.S. Department of Transportation in accordance with the provisions of Title VI of the Civil Rights Act of 1964, that in connection with the filing of an application for assistance under the Urban Mass Transportation Act of 1964, as amended, the applicant give an assurance that it will comply with Title VI of the Civil Rights Act of 1964 and the U.S. Department of Transportation requirements thereunder; and

WHEREAS, it is the goal of the Applicant that minority business enterprise be utilized to the fullest extent possible in connection with this project, and that definitive procedures shall be established and administered to ensure that minority businesses shall have the maximum feasible opportunity to compete for contracts when procuring construction contracts, supplies, equipment contracts, or consultant and other services,

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Southern California Rapid Transit District:

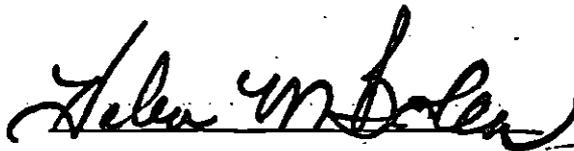
1. That the General Manager is authorized to execute and file an application for further amendment to UMTA Grant CA-03-0130 under Section 3 of the Urban Mass Transportation Act of 1964, as amended, on behalf of the Southern California Rapid Transit District with the U.S. Depart-

ment of Transportation for \$25,000,000 of additional Metro Rail preliminary engineering funding. The total estimated project cost is \$31.25 million.

2. That the General Manager is authorized to execute and file with such application an assurance or any other document required by the U.S. Department of Transportation effectuating the purposes of Title VI of the Civil Rights Act of 1964.
3. That the General Manager is authorized to furnish such additional information as the U.S. Department of Transportation may require in connection with the applications or the project.
4. That the General Manager is authorized to set forth and execute affirmative minority business policies in connection with the project's procurement needs.
5. That the General Manager is authorized to execute all other necessary documents and contracts in connection with said application for grant amendment filed with the U.S. Department of Transportation, Urban Mass Transportation Administration.

CERTIFICATION

The undersigned, duly qualified and acting as District Secretary of the Southern California Rapid Transit District, certifies that the foregoing is a true and correct copy of Resolution No. R-83-006 adopted at a legally convened meeting of the Board of Directors of the Southern California Rapid Transit District held on January 13, 1983.



DATED: January 25, 1983

(SEAL)



U.S. Department
of Transportation

Urban Mass
Transportation
Administration

JUN 10 1983



REGION IX
Arizona, California,
Hawaii, Nevada, Guam

Two Embarcadero Center
Suite 620
San Francisco, California 94111

Handwritten signatures and initials: "R. K. ...", "M. ...", "cc - ..."

RECEIVED

JUN 16 1983

GENERAL MANAGER

Mr. John A. Dyer, General Manager
Southern California Rapid Transit District
425 South Main Street
Los Angeles, CA 90013

Re: Project No. CA-03-0130
Amendment No. 4

Dear Mr. Dyer:

I am pleased to advise you that we have approved a capital assistance grant amendment under Section 3 of the Urban Mass Transportation Act of 1964, as amended, in the maximum amount of \$25,000,000. These funds and our previous commitment of \$46,074,400 provide a total of \$71,074,400 to this project and will aid in financing engineering and design work for 10 stations and related line segments from Wilshire and Vermont to North Hollywood.

Enclosed are two copies of the approved project budget, four counterparts of the Administrator's offer of contractual assistance and instructions which you should follow in executing these counterparts. Please note the five special conditions which have been appended to the contract for assistance. Conditions one through four are made necessary by the Federal Public Transportation Act of 1982. The fifth condition is project specific and requires a mutually acceptable statement of work for continuing preliminary engineering phases I and II prior to commencement of that work.

We look forward to working with you in carrying out this worthwhile project. Should you have any questions or need assistance, please feel free to contact Mr. Alan P. Steiner or Isaac R. Showell, the Transportation Representative for this project, at (415) 556-9364.

Sincerely,

Handwritten signature: "Brigid Hynes-Cherin"
Brigid Hynes-Cherin
Regional Administrator

Enclosures

Obligation Date: APR 1 1983

Fund Code: BHA, CH2, CH3

ISTRIBUTION	A	I	V
1-1/2 Civil Engineer			
Administration			
System Control			
Systems Analysis			
Comm. Relations			
Plans & Structures			
Microsystems			
Relations/Planning			
Construction			



U.S. Department
of Transportation

Urban Mass
Transportation
Administration

REGION IX
Arizona, California,
Hawaii, Nevada, Guam

Two Embarcadero Center
Suite 620
San Francisco, California 94111

July 22, 1983

Mr. John Dyer
General Manager
SCRTD
425 South Main Street
Los Angeles, California 90013

Subject: CA-03-0130 Amendment No. 4
Waiver on Special Conditions

Dear Mr. Dyer:

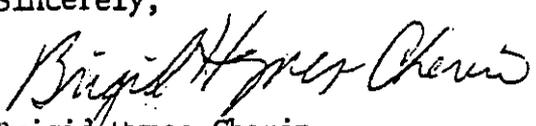
We have reviewed your letters of July 20 and 21, together with the enclosed Continuing Preliminary Engineering Work Program document.

Based on our review, we concur that Special Condition No. 5 in our letter of June 10, 1983, relating to a mutually acceptable statement of work, has been satisfied.

Therefore, you may proceed with Continuing Preliminary Engineering activities. As we have pointed out before, contract authorizations under this phase cannot exceed the level of design specified in the grant application and further defined in the above Work Program. Entering into a scope of work for 100% design at this point would constitute a cost incurred prior to grant award and would be ineligible for UMTA participation.

If I can be of further assistance to you, please let me know.

Sincerely,


Brigid Hynes-Cherin
Regional Administrator

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
CONTINUING PRELIMINARY ENGINEERING WORK PROGRAM
FOR
METRO RAIL PROJECT

JULY 21, 1983

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CONTINUING PRELIMINARY ENGINEERING
ENGINEERING STATEMENT OF WORK
JULY, 1983

INTRODUCTION AND PURPOSE

This document describes the general tasks that will be performed during the Continuing Preliminary Engineering (CPE) phase of the Southern California Rapid Transit District Metro Rail Project.

The purpose of Continuing Preliminary Engineering is to enable the District to design the Metro Rail Project to properly interface with ongoing private sector development. This will provide for complete coordination between public and private sector projects which will reduce capital, operating and maintenance cost and will enable the District to benefit from joint development investments.

DEFINITION OF CONTINUING PRELIMINARY ENGINEERING

Continuing Preliminary Engineering (CPE) for the Project is the further development of engineering and architectural designs of specific facilities and systems, and packaging of plans and specifications for discrete units of construction required to refine cost estimates and interface designs with adjacent development.

CPE will take the Project from Preliminary Engineering stage to about the 50-85% overall design level as delineated herein. CPE will produce a detailed design, a refined cost estimate and a completed in place project management plan which will carry the project to completion through the construction phase.

Based on the contract packages developed during Preliminary Engineering, the Continuing Preliminary Engineering design units have been organized in two phases, as follows, for stations and line sections:

Phase I

A-100: Central yard and shops, including yard lead tracks from Union Station.

A-135: Union Station

A-140: Tunnel segment between Union Station and 7th/Flower Station, including Civic Center and 5th/Hill Stations.

A-165: 7th/Flower Station

A-1701 Tunnel segment from 7th/Flower to Wilshire/Vermont Station, including Wilshire/Alvarado Station.

A-195: Wilshire/Vermont Station.

The work covered by these design units will advance the design and engineering of the station and line segments to approximately 85 percent level of completion.

Phase II

A-220: Tunnel segment between Wilshire/Vermont and Wilshire/La Brea Stations, including Wilshire/Normandie and Wilshire/Western Stations.

A-245: Wilshire/La Brea Station and pocket track.

A-250: Tunnel segment from Wilshire/La Brea to Fairfax/Beverly, including Wilshire/Fairfax Station.

A-275: Fairfax/Beverly Station.

A-310: Tunnel segment from Fairfax/Beverly to Hollywood/Cahuenga including Fairfax/Santa Monica and La Brea/Sunset Stations.

A-350: Hollywood/Cahuenga Station and pocket track.

A-410: Tunnel segment from Hollywood/Cahuenga to Universal City Station.

A-425: Universal City Station.

A-430: Tunnel segment between Universal City Station and North Hollywood Station.

A-445: North Hollywood Station and end line storage track.

The work covered by these design units will advance the design and engineering of the station and line segments to approximately 50 percent level of completion.

In addition to the designs of stations, line sections and central maintenance facilities, the designs of the operational systems will be advanced to comparable levels of completion. Included in the operational systems are passenger vehicles, auxiliary vehicles, traction power, auxiliary power, train control, communications, fare collection, vehicle maintenance, fire protection, central supervisory and systemwide electro-mechanical systems. The system design will be taken to levels that will produce prefinal deliverables suitable for coordinated use by the other designers and for industry review.

It will be essential to verify the operational, performance and dimensional compatibility of the operational systems that will be furnished and installed throughout the stations and facilities. The verification process will be carried into the essential portions of an industry review process, wherein prefinal documents at the 50-85% level of completion will be submitted for review and comments by qualified contractors.

Prefinal deliverables will include draft versions of all the documents that will be needed for the District to contract for procurement, delivery, installation and acceptance of the operational systems. The prefinal documents will include draft specifications, prefinal contract and reference drawings, and construction schedules. The draft specifications will include, in addition to technical requirements, terms, conditions and system assurance requirements, including reliability, maintainability and system safety. Following are descriptions of tasks in the Continuing Preliminary Engineering Program.

CPE PROEDURE

As the agency of the U. S. Department of Transportation responsible for issuing and managing federal grants for mass transportation, the Urban Mass Transportation Administration (UMTA) is charged with monitoring technical progress on all phases of the Metro Rail Project. In addition to reviewing applications for funding, UMTA is responsible for overseeing financial, contract and procurement compliance by the District. The overall project management and monitoring function is conducted by the UMTA Region IX office in San Francisco, which has delegated that task to the region's Chief Area Engineer located in Los Angeles.

During the Continuing Preliminary Engineering Program, SCRTD will periodically submit material to UMTA for their review and comments. Detailed reviews will be held each quarter, or at such times as established by either SCRTD or UMTA, and will include team reviews, as necessary, to ensure UMTA's timely concurrence and to ensure that UMTA's oversight responsibilities are met. This may be carried out through the technical advisory memorandum process or other suitable procedures. The submittal of pertinent material at appropriate times is the responsibility of SCRTD.

SCOPE OF CONTINUING PRELIMINARY ENGINEERING

The Continuing Preliminary Engineering Program will further develop the engineering design of all system elements. The work will be performed by the District, by a General Consultant under contract to the District or by subcontracts to the General Consultant. The work will be based directly upon the data, products and concepts

established in Preliminary Engineering. The following is the description of the work to be performed during the Continuing Preliminary Engineering Program:

A. Project Management

Description

A project management plan will be completed and implemented which defines the objectives of the project, the methods and resources proposed to be used in meeting these objectives, the overall management strategy, the responsibilities, authorities, measures of performance for all parties involved in the project and established procedures for resolution of problems at all stages of the Project. The Plan will apply to both the design and construction phases. The following tentative outline will be used in developing the project management plan; the final product may vary somewhat from this outline:

1. Introduction
2. Project Definition and Objectives
3. Project Organization and Administration
4. Work Program and Schedule
5. Project Budget and Schedule
6. Project Control System
7. Design Management and Control Plan
8. Construction Management Plan and Procedures
9. Reports/Documents

The Construction Management Plan will include a detailed description of the level of staffing required for managing the Project under two alternative approaches:

- a. In-House Construction Management Staff.
- b. Consultant Construction Management Staff.

Details to ensure a high quality assurance program during CPE will be indicated; costs for both approaches will also be included.

Products

Final Project Management Plans for both design and construction.

B. Architectural Design

Description

The District will carry the architectural design of all stations, to the 50-85% level of completion, as delineated in the Phase I and Phase II contracts. Included in the work to be prepared by Consultants are designs, drawings, specifications, renderings and models, as necessary, indicating station architectural design features. All station elements will be developed to the level indicated above under the definition of CPE.

- (1) The plans shall include development of designs for those station elements which will be similar for purposes of economy, ease of maintenance, and necessary to retain a balanced system. Station site plans will be individually tailored to the context of the immediate contiguous environment. Architectural plans shall include station configuration drawings and details showing all sitework, concourse and platform layouts, and auxiliary facilities.
- (2) Architectural standard drawings will be prepared for the systemwide elements of continuity for lighting fixtures, maintenance equipment, gates, barriers, surveillance, communications, and related graphics, stairs, escalators, elevators, hardware and number, type and location of fare collection equipment. The elements of variable design include such elements as site design, materials selection, locations for systemwide light fixtures and artwork.
- (3) Special consideration shall be given in the design process such that all facilities used by the handicapped patrons and the disadvantaged shall incorporate design features which fulfill the requirements of the criteria and the American National Standards Institute.
- (4) Criteria shall be developed for the architectural design of yard and shop facilities, and the Central Control Center. Design of yard and shops and the Central Control Center shall include drawings, renderings, models, criteria, standards, plans and specifications.

Products

Architectural plans, specifications, renderings, models and cost estimates to the 50-85% level of completion.

C. Structural Design

Element of design shall include development of details for foundations, tunnels, piers, girders and other structural members, including cross-sections, fabrication and installation drawings for cut-and-fill sections, subway sections and at-grade facilities, under varying conditions. These will carry the overall structural design to 50-85% level of completion, as delineated in the Phase I and Phase II contracts. Structural elements of design would also be applicable to and required for tunnel liners and cut-and-cover sections, underpinning and support of structures for utilities. In addition, the District will perform the following:

(1) Restoration Design

Prepare the design of the restoration of all facilities to be repaired, restored or rebuilt following construction. Prepare contract drawings for restoration of such facilities.

(2) Underpinning

For underpinning methods to be used, prepare a report indicating recommendations for evaluating trouble locations based on detailed design. Determine risks and the need to underpin properties and structures potentially affected by construction. The report shall identify the categories and locations of said structure and the cost of any alternatives.

Products

Detailed structural design, drawings, specifications and estimates at the 50-85% level of completion.

D. Civil Design

The District will, through subcontracts, cause to perform civil engineering designs to the 50-85% level of completion, as delineated in Phase I and Phase II contracts. Environmental management considerations will be included. The work will include, but not be limited to, the following:

(1) Alignment and Grade

Determine final horizontal and vertical alignment. Alignment shall be mathematized utilizing computer programs.

(2) Utilities Relocation Design

Provide where necessary composite utility drawings, using supplemental drawings as provided by other agencies for facility areas with requirements for utility relocations.

Prepare contract drawings, specifications and cost estimates delineating the existing utilities. These drawings shall include:

- (a) Composite plans
- (b) Cross sections
- (c) Large-scale detail of critical locations

Prepare solutions for relocation, abandonments, temporary support or other disposition of affected utilities. Prepare the design and contract documents for permanent relocation of utilities affected by construction. Design shall be based on a replacement in kind. Design shall also include the method of accommodating the utilities during construction and the location of essential service connections.

Prepare for betterment of relocated or revised facilities:

- (a) A written description of each betterment
- (b) Drawings delineating each betterment
- (c) A cost estimate which identifies the cost differential between the designed facility and a "replacement in kind" facility

Betterments shall be defined as existing when the replacement facility provides an increase in capacity beyond that agreed to in the Master Agreements. This may be a more efficient system, an extension of service, or a more durable facility; or as otherwise defined in the Master Agreement or Implementing Agreement consummated with the utility owner by the District.

Prepare contract documents for relocated or revised facilities.

Designate in the contract documents the utility relocation work items to be performed by others.

(3) Street and Highway Relocation Design

Prepare the design, drawings, specifications and cost estimates of temporary and permanent relocation of streets and highways affected by construction. Design shall be based on agreements designated in the Master

Agreement and shall include plans for the maintenance of traffic, including detours, which shall be based on requirements and traffic flow data furnished by the District.

Prepare for any betterments of relocated streets and highways and railroads the following data:

- (a) A written description of each betterment
- (b) Drawings delineating each betterment
- (c) Cost estimates which identify the cost differential between the designed facility and a "replacement in Kind" facility

Prepare contact drawings for relocated streets and highways.

(4) Civil and Structural Plans

Detailed designs, plans, specifications and cost estimates will be prepared for Civil and Structural design elements. Plans shall include, but not be limited to, the following:

- o Detailed Right-of-Way drawings including lot descriptions
- o Horizontal and Vertical Alignment
- o Yard and Shop Areas and Equipment
- o Access Roads and Traffic Rerouting Plans
- o Highway and Railroad Relocations Plans
- o Parking Facilities
- o Utility Plans
- o Facility Locations
- o Security Provisions
- o Environmental Management Provisions
- o Storm Drainage and Normal Drainage Plans
- o Track Layouts
- o Station Complex Plans

Products

Civil engineering designs, drawings, specifications and cost estimates at the 50-85% level of completion, as delineated in the Phase I and Phase II contracts.

E. Mechanical Design

The District will develop designs of all equipment related to electro-mechanical devices, transit vehicles, yard and maintenance equipment, ventilation, emergency exhaust system, and climate control concepts, including cooling and forced air ventilation. Appropriate elements of the fire protection system and plumbing are to be included in this group of design requirements. These designs will be developed to 50-85% level of completion.

Layout and final space requirements of mechanical service rooms and facilities at passenger terminals and electrical substations are to be included in this design. Designs will be provided for air pumping facilities, including fan and vent shafts and other mechanical elements of the system.

Products

Mechanical engineering designs, drawings, specifications and cost estimates at the 50-85% level of completion.

F. Electrical Design

Criteria and designs will be developed for the traction power systems and subsystems for train propulsion, and general operating power for the other system facilities. These criteria shall describe the power sources, required voltages, current characteristics, general characteristics of substations and standards for equipment quality, performance and reliability. Specifications for automatic operation for standby and emergency requirements shall be established.

This design will include all wiring, cable, terminals, raceways, conduit, panels, relay rooms and other ancillary equipment details and lockers required for the final design.

Products

Electrical engineering designs, drawings, specifications and cost estimates at the 85% level of completion.

G. Train Control and Communications

Criteria and designs will be developed to the 85% level of completion to provide the system with train control and communications systems and subsystem, based on thorough design analyses. Systems will include appropriate indicators designed to monitor pre-determined areas for security, fire, power failures,

equipment failure and unscheduled intrusion of foreign objects into controlled equipment areas. Train control design will include a "centralized train control" display panel will indicate block occupancy, train movements, switch positions and wayside station operation status. Communications design will include a direct communications link between controlled train cab and the control center as well as each wayside station. Daily operational functions shall be recorded to provide an operational history.

Communications criteria will be designed to the 85% level of completion and will be developed to provide for communicating with the vehicle control system under normal and emergency conditions. An independent power source for emergency use shall be specified.

Designs will include provisions for public address system for passenger information and external communication for voice contact between crew and control center and maintenance personnel will be required.

Criteria will be developed to provide the base for design technology for Train Operations. The design of the Train Operations system will include, at a minimum, train dynamics of acceleration and braking, signaling and interlocks, and traffic control. Traffic control will include a simulation via a mimic board located in central control to monitor transfers, turnbacks, routes overall, schedules (headways and dwell times) and performance levels.

An alternatives and "trade-off" analysis of available equipment versus equipment which requires a new design and manufacture will be conducted. This review shall precede all final equipment selection.

Products

Train control and communications equipment designs, drawings, specifications and cost estimates at the 85% level of completion.

H. Landscaping Design

Detailed landscape design will be prepared in accordance with approved criteria and standards, which will result in an aesthetically pleasing product performing functional requirements for visual buffering and noise abatement. Landscaping standards shall be adaptable to the various system conditions, and shall be in keeping with the local climatic conditions, as well as reasonable maintenance requirements. The maintenance requirements shall be set forth, including water requirements and number of landscape maintenance personnel required.

Products

Landscaping designs, drawings, specifications and cost estimates at the 50-85% level of completion, as delineated in the Phase I and Phase II contracts.

I. Surveying and Aerial Mapping

The District, through subcontracts, will obtain necessary field survey services including, but not be limited to, the following activities:

- o Verify the network of horizontal and vertical control points, which will serve as a basis for all design and construction surveys to be performed throughout the project and to furnish "mile" or "kilometer" markers for use during operation of the system.
- o Establishing additional ground control points required in connection with the controlled aerial photo surveys of the system.
- o Obtaining and providing all necessary project facilities design surveys.
- o Obtaining complete ground topographical surveys of the project area parcels to be acquired for the project, including information on structures and other improvements, etc., within those parcels. This includes geodetic control, cadastral, route location and design and construction surveys.
- o Checking the horizontal and vertical dimensions and positioning of installed facilities.

This work is in addition to survey activities required by construction contractors.

Products

Completed ground, and ground control surveys and topographic surveys

J. Subsurface Investigations

The District, through subcontracts, will (i) complete the soils boring program for the Project to enable the design to go to completion, and (ii) prepare subsurface investigation and foundation design reports suitable for final design and construction. This task includes obtaining specific soils engineering information required for individual project sections and facilities.

Products

Final Project borings, final Geotechnical Investigation Report and foundation design reports.

Final reports on review and evaluations, including recommendations.

K. Right-of-Way and Property Acquisition

The acquisition of right-of-way is one of the major components of the development and construction of the Metro Rail Project. This process will represent a sizeable portion of the cost of the system. Therefore, it is imperative that comprehensive policies and procedures are developed to assure the timely availability of real estate for construction activities.

The Metro Rail Project will require the acquisition of a variety of real estate interests including full fee takes, partial takes, and easements of various types. Since a majority of the system will be in subway, a large portion of the acquisitions will be for subsurface easement rights. Other easements may include temporary construction easements, aerial easements, utility easements, drainage easements and the like.

A very preliminary review of the real estate requirements of the various alternatives reveal that as many as 500 to 600 parcels may be impacted by the system. The relocations required could vary from 100 to 200 residential and commercial displacements depending on the alignment and construction techniques selected.

Based on the requirements of the Federal Uniform Relocation Assistance and Land Acquisition Policies Act of 1970 and applicable State laws, procedures will be developed for appraisals and acquisition of real property and relocation of displaced persons and businesses; procedures will also be developed for property management by the District. The procedures developed will be utilized in right-of-way acquisition based on defining and certifying right-of-way needs and types of acquisition required for the project. Right-of-way drawings will be complete including property descriptions.

Products

Certified right-of-way needs, Relocation Plan, Property Management Plan, right-of-way drawings including property descriptions.

L. Cost Estimates

The District will coordinate or consolidate all cost estimates prepared by the General Consultant or subconsultants for each construction procurement and installation contract. The preparation of estimates, where applicable will be of "take-off" type, including person hours by labor category, equipment cost,

overhead and profit. Where lump sum items are used, a basis for determination will be used. The estimates will show the procedures and state the assumptions used. The estimate back up data will be based on the latest available information pertaining to the labor, equipment and material costs in the District area, and will include the basis for cost escalation. The estimates will include the construction contractor's overhead, profit and contingency rate. The bid items shall be on a balanced basis and no adjustment shall be made for early money or other factors that may be used in unbalancing bid items. All cost estimates will be developed to the 50-85% level of completion, as delineated in the Phase I and Phase II contracts.

M. Joint Development

Joint development and value capture involves the incorporation of real estate projects, including collateral areas, into the public transit stations which serve as the points of access to the system. At each station the District will:

1. Develop a detailed survey of existing conditions and site plan that document each build-up condition, environmental problem, blighting condition, conflicting land use and status of current land use. This will also include information on property ownership, recent sales, transactions and new development adjacent to each station area.
2. Identify parcels of land that may be developed or redeveloped at each station area.
3. Develop a joint development study design for each station which will include the following:
 - a. Market potential analysis for various uses commensurate with existing zoning/uses.
 - b. Alternative development site packaging and disposition strategies which reflect projected market conditions.
 - c. Cost/benefit analysis, particularly as they impact transit ridership and dedicated revenues for transit capital and operating costs.
 - d. Design parameters specifying use mix, intensities, lot coverage, floor area ratios, parking requirements, bonus incentives for amenity packages, and transit linkages.
 - e. Land disposition and Parcel Packaging Strategies.
 - f. Financial Plan/Packaging on a parcel specific basis.

- g. Development Program/Staging.
- h. Prospectus for proposed Joint Development.
- i. Evaluation of Proposals for Joint Development.

The following elements will be examined in relation to joint development potential for the project:

(1) Establish Private/Public coventure policy

The District will prepare a private/public coventure financial program that will demonstrate the requisite level of regional and private sector support for the project. Of parallel importance is the need to define the necessary infrastructure investment, land use policy, institutional and legislative decision/actions that will ensure successful implementation of the Metro Rail private/public coventure programs.

(2) Establish Procedural Base

The District will examine the joint development value capture implementation procedure alternatives and recommend either an omnibus solution or an effective short-term approach that can be modified subsequent to future legislative actions.

(3) Establish Public/Private Coventure Program

The District will formalize the policy and procedural aspect of the public/private coventure program. In addition, specific revenue estimates and implementation commitments to be documented in a single document suitable for submittal with a discretionary Section 3 grant application.

(4) Prepare Metro Rail Corridor/Station Development Potential Forecasts

The District will develop Metro Rail corridor/station area development forecasts that can be utilized for development policy analysis as well as the requisite station area masterplanning.

(5) Establish Joint Development Design Parameters

The District will establish the key physical/site plan "rules" for the joint development purposes.

(6) Establish Development Envelope

The District will establish the development envelope for each Metro Rail Station area. The total space and

composition of future short and long-term development to be allowed within each Metro Rail Station area must be defined in the context of a "development envelope" that will be employed in the transit station area master-planning process. If the corridor/station area development forecasts indicate a future market demand in excess of the maximum statutory allowance, consideration will be given to the merits of special exceptions for the few stations where this may occur; at the same time, limited growth stations will be identified and holding capacity guidelines should be agreed to prior to establishing the individual station area development envelope.

(7) Station Area Masterplanning

The District will prepare individual station area master plans for each station. The five stations located in the Los Angeles CBD will receive the highest priority. The station area master plan documents will be prepared at a level of detail equivalent to a redevelopment plan. An equal emphasis will be given to transportation facility/vehicle and pedestrian circulation issues, infrastructure and pedestrian amenities, and land use development. The rules for site plan approval and ombudsman support will also be defined. The citizen and private sector involvement in the Metro Rail Station masterplanning process will be documented and acknowledged.

(8) Citizen Participation

A citizen participation program will be designed to utilize existing mechanisms and established groups/committees of other principal public agencies. The citizen involvement program will be organized and structured to allow for a full discussion of issues and technical presentation of key aspects of infrastructures needs, parking and circulation plans. Private sector interests will also be represented in these key work sessions.

(9) Joint Development Project Packaging

The District will consummate the actual implementation of the joint development/value capture projects in direct relation to the Metro Rail System. There are three key elements to the joint development packaging process. The first elements involves monitoring negotiations with ongoing projects to ensure coordination with the Metro Rail Project and compliance with the adopted public/private coventure program. The second element

relates to site specific project packaging. The third element encompasses carrying out the final development review and approval with provision for the full ombudsman support.

(10) Implementation

During the station masterplanning and joint development/value capture packaging process, a specialized negotiation strategy analysis, leverage funding grant preparation support and project staff/private sector seminar programs will be developed. In order to resolve certain issues such as parking requirements or pedestrian circulation, specialized design or impact studies will be undertaken. Legal contract drafting and legislative monitoring, evaluation and formulation efforts will also be an integral part of the implementation program.

Products

1. Enabling legislation
2. Identification of development opportunities
3. Joint development program for each station
4. Citizen participation program

N. Program Control

The District will establish the necessary financial and management controls for administering and overseeing the General Consultant and subconsultant contracts. Specifically, the District retains responsibility for the following control functions:

- o Policy direction and technical oversight.
- o Subconsultant contract approval, including amendments.
- o Master project control system for cost and schedule adherence.
- o Contract funding authorization.
- o Financial and performance audits.

An automated control system will be used to monitor current status and forecast progress in meeting integrated cost and schedule performance objectives.

Schedule control will be exercised by developing a Project Master Schedule and detailed task schedules for each of the major elements in the master schedule. The project master schedule will

be based on CPM networks for the major elements for both design construction phases. All CPE scope of services will be identified in the detailed schedules.

Budget control will be exercised by summary and detailed budgets. Budgets will be prepared for increments of scheduled work to establish the baseline for contract performance measurement.

Reporting of the status of CPE will be done by the preparation of monthly Progress Reports. All schedule and budget data will be reviewed to identify deviations from established plans. Program Control will analyze the deviations and isolate the causes and will report possible corrective actions.

Products

1. Master and detailed schedules
2. Summary and detailed budgets
3. Variance Analysis Reports
4. Progress Reports

0. Construction Management

The District will perform Construction Management services during Continuing Preliminary Engineering phase of the project provide the following:

- o Evaluate criteria and standards for cost-effectiveness and constructibility and recommend cost-saving items.
- o Review standard and directive drawings and provide an evaluation for cost-effectiveness and constructibility.
- o Review the preliminary designs and drawings prepared during Preliminary Engineering and provide an evaluation for cost-effectiveness and constructibility and recommend cost-saving designs.
- o Evaluate preliminary cost estimates prepared during Preliminary Engineering and provide an evaluation.
- o When requested by the District, provide comparative cost studies of alternate materials and construction methods.
- o Review contract packaging, long lead procurements and schedules prepared during Preliminary Engineering and recommend modifications, if necessary.
- o Review Continuing Preliminary Engineering designs, drawings and specifications as they are being developed by the section designers for cost-effectiveness and constructibility.

- o Evaluate alternative automated projected management control systems and recommend one most suitable for use during the construction phase of the Project.
- o Develop manning requirements for construction management during the construction phase, both by in-house as well as consultant personnel. Included will be the in-house staff requirements to manage the Consultant effort.
- o Develop Quality Assurance Program and training procedures for the construction program.

Products

Management Plan, manning requirements, cost estimates, Quality Assurance Plan, Training Manual and guidelines.