COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

DEAN D. EFSTATHIOU, Acting Director

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ALHAMBRA, CALIFORNIA 91802-1460

October 7, 2008

IN REPLY PLEASE
REFER TO FILE: T-6

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

TRAFFIC SIGNAL SYSTEM
CITY OF DOWNEY--COUNTY COOPERATIVE AGREEMENT
AMENDMENT NO. 1 TO AGREEMENT NO. 75400
(SUPERVISORIAL DISTRICT 4)
(4 VOTES)

SUBJECT

This action is to approve and authorize the Acting Director of Public Works or his designee to execute Amendment No. 1 to Agreement No. 75400 between the City of Downey and the County of Los Angeles to provide up to $176,000 in additional funds for the purchase and installation of an Information Exchange Network Command Data Interface and related equipment by utilizing Los Angeles County Metropolitan Transportation Authority Grant Funds and matching County funds.

IT IS RECOMMENDED THAT YOUR BOARD:

1. Acting as a responsible agency, find that the project is exempt from the provisions of the California Environmental Quality Act.

2. Adopt the resolution to find that the project to procure and install an Information Exchange Network Command Data Interface in the City of Downey is of general County interest and that County aid in the amount of $176,000 should be extended to the City.

3. Approve and authorize the Acting Director of Public Works or his designee to sign Amendment No. 1 to Agreement No. 75400 between the City of Downey and the County of Los Angeles, to provide for the City to perform procurement services, installation, integration, contract administration, and all other work necessary to purchase and install an Information Exchange Network Command Data Interface and related equipment within the City of Downey. The amendment provides for the County to provide a not-to-exceed amount of $176,000 toward the cost of the interface by utilizing Los Angeles County Metropolitan Transportation Authority's Grant Funds and matching County funds. The total amount of Agreement No. 75400 is revised to be $476,000.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The purpose of this recommended action is to execute an Amendment to Agreement No. 75400 with the City of Downey to provide funds for the procurement and installation of an Information Exchange Network Command Data Interface (IEN CDI).

Implementation of Strategic Plan Goals

The Countywide Strategic Plan directs the provision of Service Excellence (Goal 1) and Community Services (Goal 6). The project will provide improved infrastructure and will enhance the quality of life in the affected communities.

FISCAL IMPACT/FINANCING

There will be no impact to the County General Fund. The cost of the project is estimated to be $176,000. The Los Angeles County Metropolitan Transportation Authority will reimburse $152,980 of the project cost from the 1995 Call for Projects Proposition C Discretionary Grant Funds for the Gateway Cities South and East Los Angeles Traffic Signal Forum. The remaining $23,020 will be funded by the County's Proposition C local return revenue. This project is included in the Fiscal Year 2008-09 Proposition C Local Return Fund budget.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

The attached amendment, which has been approved as to form by County Counsel, provides for the City of Downey to perform procurement services, installation, integration, contract administration, and all other work necessary to purchase and install an IEN CDI and related equipment within the City of Downey.

The amendment establishes the County contribution to the City for actual expenditures not to exceed $176,000 toward the cost of the project by utilizing the Los Angeles County Metropolitan Transportation Authority Grant Funds and other County funds. The total amount of Agreement No. 75400 is revised to be $476,000. The amendment is authorized and provided for in Sections 1680-1684 of the California Streets and Highways Code.

ENVIRONMENTAL DOCUMENTATION

This project is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15301(c) of the CEQA guidelines and Class 1(x), Subsections 4 and 5 of the County Environmental Reporting Procedures and Guidelines adopted by your Board on November 17, 1987. These exemptions provide for procurement and installation of an IEN CDI in the City of Downey. The City of Downey is the lead agency for this project and will independently consider and reach its own conclusions regarding the environmental effects of the project.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

There will be no impact on current County services or projects during the performance of the recommended services, including implementation of the proposed system.

CONCLUSION

Please return one adopted copy of this letter and the signed resolution to the Department of Public Works, Traffic and Lighting Division.

Respectfully submitted,

William H Higley

for DEAN D. EFSTATHIOU
Acting Director of Public Works

DDE:WJW:pc

Attachments (3)

cc: Chief Executive Office (Lari Sheehan)
County Counsel

RESOLUTION OF THE BOARD OF SUPERVISORS OF THE COUNTY OF LOS ANGELES TO EXTEND COUNTY AID TO THE CITY OF DOWNEY FOR THE PURPOSE OF INSTALLING AN INFORMATION EXCHANGE NETWORK COMMAND DATA INTERFACE AND ASSOCIATED COMMUNICATIONS EQUIPMENT

WHEREAS, CITY and COUNTY desire to amend Agreement No. 75400 to provide for the development of a Command Data Interface between CITY's *i2* Traffic Signal Control System Software and the COUNTY's Information Exchange Network software; and

WHEREAS, CITY proposes to procure consultant services to develop a Command Data Interface for the CITY's *i2* Traffic Signal Control System Software according to the scope of work that the City received from their consultant, Siemens ITS, which work is hereinafter referred to as INTERFACE; and

WHEREAS, INTERFACE is consistent with the scope of work for traffic improvements within CITY pursuant to Memorandum of Understanding Number P002316D (495-246-3-92-95) between COUNTY and the Los Angeles County Metropolitan Transportation Authority (Metro); and

WHEREAS, INTERFACE is entirely within the jurisdictional limits of CITY; and

WHEREAS, INTERFACE is of general interest to CITY and COUNTY; and

WHEREAS, CITY is willing to perform the procurement administration for INTERFACE; and

WHEREAS, the COST OF INTERFACE includes the costs of the procurement, administration, and installation of the Information Exchange Network Command Data Interface (IEN CDI), hardware, and 3 years of vendor system maintenance and support for INTERFACE, as more fully set forth herein; and

WHEREAS, the total COST OF INTERFACE is currently estimated to be One Hundred Seventy-Six Thousand and 00/100 Dollars ($176,000); and

WHEREAS, COUNTY has secured and obtained grant funds from Metro up to a maximum of One Hundred Fifty-Two Thousand Nine Hundred Eighty and 00/100 Dollars ($152,980) and will provide matching funds up to a maximum of Twenty-Three Thousand Twenty and 00/100 Dollars ($23,020) to finance the COST OF INTERFACE; and

WHEREAS, COUNTY is willing to utilize Metro grant funds and COUNTY matching funds to reimburse CITY for actual expenditures not to exceed One Hundred Seventy-Six Thousand and 00/100 Dollars ($176,000) toward the COST OF INTERFACE; and

WHEREAS, CITY is willing to finance the remaining COST OF INTERFACE in excess of COUNTY's maximum contribution of One Hundred Seventy-Six Thousand and 00/100 Dollars ($176,000); and

WHEREAS, CITY has agreed to use all aid it receives from the COUNTY with respect to the activities described herein, and shall return to the COUNTY any portion of such aid which is not thus used; and

WHEREAS, the COUNTY and CITY are willing to increase the total COST OF SYSTEM, including the COST OF INTERFACE, to be Four Hundred Seventy-Six Thousand and 00/100 Dollars ($476,000), and

WHEREAS, such a proposal is authorized and provided for by provisions of Sections 1680-1684 of the California Streets and Highways Code.

NOW, THEREFORE, in consideration of the mutual benefits to be derived by CITY and COUNTY and of the promises herein contained, it is hereby resolved as follows:

1. The INTERFACE is of general County interest and County aid shall be extended therefor.

2. Subject to the terms and conditions set forth herein, the County of Los Angeles consents, pursuant to the provisions of Sections 1680-1684 of the California Streets and Highways Code, to extend County aid in the amount of $176,000 to the City of Downey for the installation of an IEN CDI System.

3. The financial obligations of the County of Los Angeles are expressly conditioned upon obtaining reimbursement from Metro pursuant to Memorandum of Understanding Number P002316D (495-246-3-92-95) between COUNTY and the Metro.

4. if any provision of this resolution is held or declared to be invalid, the resolution shall be void and the consent granted hereunder shall lapse.

The foregoing resolution was on the 7th day of OCTOBER, 2008, adopted by the Board of Supervisors of the County of Los Angeles and ex officio the governing body of all other special assessment and taxing districts, agencies and authorities for which said Board so acts.

SACHI A. HAMAI
Executive Officer of the
Board of Supervisors of the
County of Los Angeles

By _____
Deputy

APPROVED AS TO FORM:

RAYMOND G. FORTNER, JR.
County Counsel

By _____
Deputy

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AMENDMENT NO. 1 TO AGREEMENT NO. 75400

This AMENDMENT, made and entered into by and between the CITY OF DOWNEY, a municipal corporation in the County of Los Angeles (hereinafter referred to as CITY), and the COUNTY OF LOS ANGELES, a political subdivision of the State of California (hereinafter referred to as COUNTY).

WITNESSETH

WHEREAS, CITY and COUNTY previously executed Agreement No. 75400 to provide funds for CITY to procure a Traffic Signal Control System Software; and

WHEREAS, in accordance with Paragraph (3)g, of Agreement No. 75400, CITY and COUNTY can amend said agreement with mutual consent; and

WHEREAS, CITY and COUNTY desire to amend Agreement No. 75400 to provide for the development of a Command Data Interface between CITY's *i2* Traffic Signal Control System Software and the COUNTY's Information Exchange Network software; and

WHEREAS, CITY proposes to procure consultant services to develop a Command Data Interface for the CITY's *i2* Traffic Signal Control System Software according to the attached Scope of Work (Attachment A) that the CITY received from their consultant, Siemens ITS, which work is hereinafter referred to as INTERFACE; and

WHEREAS, CITY is willing to perform the procurement administration for INTERFACE; and

WHEREAS, the total COST OF INTERFACE is currently estimated to be One Hundred Seventy-Six Thousand and 00/100 Dollars ($176,000), and

WHEREAS, COUNTY has secured and obtained additional grant funds from Metro up to a maximum of One Hundred Fifty-Two Thousand Nine Hundred Eighty and 00/100 Dollars ($152,980) and will provide matching funds up to a maximum of Twenty-Three Thousand Twenty and 00/100 Dollars ($23,020) to finance the COST OF INTERFACE; and

WHEREAS, CITY is willing to finance the remaining COST OF INTERFACE in excess of COUNTY's maximum contribution of One Hundred Seventy-Six Thousand and 00/100 Dollars ($176,000); and

WHEREAS, the COUNTY and CITY are willing to increase the total COST OF SYSTEM, including the COST OF INTERFACE, to be Four Hundred Seventy-Six Thousand and 00/100 Dollars ($476,000), and

NOW, THEREFORE, in consideration of the mutual benefits to be derived by CITY and COUNTY and of the promises herein contained, Agreement No. 75400 is hereby amended as follows:

(1) IT IS MUTUALLY UNDERSTOOD AND AGREED AS FOLLOWS:

a. SYSTEM is hereby redefined to include SYSTEM as described in Agreement No. 75400 and INTERFACE as defined in Attachment A of this amendment.

b. Total cost of SYSTEM is increased to Four Hundred Seventy-Six Thousand and 00/100 Dollars ($476,000).

c. All other terms and provisions of Agreement No. 75400 shall remain in full force and effect.

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IN WITNESS WHEREOF, the parties hereto have caused this AGREEMENT to be executed by their respective officers, duly authorized, by the CITY OF DOWNEY on_____, 2008, and by the COUNTY OF LOS ANGELES on _____, 2008.

COUNTY OF LOS ANGELES

By_____
Acting Director of Public Works

APPROVED AS TO FORM:

RAYMOND G. FORTNER, JR.
County Counsel

By_____
Deputy

CITY OF DOWNEY

By_____
Mayor

ATTEST:

By_____
City Clerk

By_____
City Attorney

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ATTACHMENT A

SIEMENS

Scope of Work for
Development of a Command Data Interface
For
***i2* to the County's Information Exchange Network**
For the City of Downey

Introduction

Siemens ITS will develop a Command Data Interface (CDI) for i2 to County's IEN that will serve the following two functions:

3. Export signal status and congestion data from *i2* and make it available to Information Exchange Network (IEN)
4. Accept commands from Information Exchange Network to implement an external plan change request.

The CDI will comprise application software (to be developed as part of this scope) and hardware (comprising a PC platform) and third party operating system software (Windows XP).

Specific Tasks

CDI development will entail the following sub-tasks:

Task 1: Detailed Design

Based on the requirements definition developed by Siemens as part of this scope and available IEN design documentation and the object definitions of the Interface Data Language (IDLs), received from the County, Siemens will develop the CDI Detailed Design Report. This design document will document the interaction between the CDI and the IEN, identify modifications needed to the *i2* system for support of the CDI, design of the CDI and specify the physical connection between *i2* and the IEN. This task will require some discussion with the County's consultant for IEN to seek clarification on issues that may not be apparent from the documentation.

Deliverables:

- CDI Detailed Design Report

Task 2: Software Development

Siemens will develop the CDI software based on the Detailed Design Report developed in Task 1. This will include carrying out the modifications to the *i2* software.
Deliverables:

- Internal to Siemens

Task 3: Integration and Testing

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Siemens will carry out integration and testing of the software developed in Task 2. For this task it is assumed that County will provide a test environment (consisting of IEN Corridor server, IEN Site server and IEN workstation) at their TMC in Alhambra. Using this test environment, the modified *i2* software will be tested against the attached requirements and acceptance tests provided by the County.

Deliverables:

Completed Acceptance Tests for functions related to

- 2.4.3.1 IEN_INTERSECTIONINFO
- 2.4.3.3 IEN_INTERSECTIONRTSUMMARY

Task 4: On-Site Installation and Test

In this task, Siemens ITS will install the CDI at the City of Downey's TMC. The CDI will be installed on a computer provided by the County. Siemens ITS will also install the County's supplied IEN Site server and IEN workstation software on hardware provided by the County at the City's TMC. It is assumed that County will provide the documentation and make their consultant, Transcore available to answer questions during this process.

The Siemens ITS Team will also set-up and test a network connection between i2, CDI, IEN Server, IEN workstation and IEN Corridor Server located at Alhambra TMC using the T-1 line provided by County.

Siemens ITS will carry out testing on-site utilizing the *i2* system and IEN workstation at the City first using the IEN test server at the County TMC and then live IEN server. Siemens ITS will conduct this testing using the acceptance test procedures developed by County for CDI Server and IEN Workstation. The on-site testing will be carried out in the presence of County and City staff. Transcore will also participate in acceptance testing via a VPN connection, and test results will be documented. Any problems found during the tests will be addressed and the particular tests will be carried out again.

Deliverables:

- Installed CDI Software
- Installed IEN Workstation Software
- Completed Acceptance Tests with IEN Test Server
- Completed Acceptance Tests with IEN Live server

Task 5: Documentation

In this task, Siemens will provide as-built documentation on the *i2* CDI based on the CDI Design Report of Task 1.

Deliverables:

- Updated CDI Design Report

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Cost Estimate

Task 1:	Detailed Design	$7,099
Task 2:	Software Development	$80,694
Task 3:	Integration and Testing	$41,237
Task 4:	On-site Installation and Test	$39,942
Task 5:	Documentation	$7,028
Total		**$176,000**

Payment Schedule

- Delivery of CDI Detailed Design Report: $7,099
- Completed acceptance testing with IEN test environment for CDI Server and IEN Workstation:
  (This testing will be done connecting to the test environment at Alhambra TMC either remotely from Siemens facility or physically at the Alhambra TMC)
  - 2.4.3.1 IEN_INTERSECTIONINFO
  - 2.4.3.3 IEN_INTERSECTIONRTSUMMARY
  $80,694
  - Completed acceptance test with IEN test environment for CDI Server and IEN Workstation for remaining functions: $41,237
  (This testing will be done connecting to the test environment at Alhambra TMC either remotely from Siemens facility or physically at the Alhambra TMC)
- Installed and tested CDI at Downey TMC with IEN Test Server $22,000
- I2 CDI connected to live IEN Server $19,942
- Delivery of updated CDI Detailed Design Report $7,028

Assumptions

- The cost estimate does not include any hardware or commercial-off-the-shelf software
- It is assumed that County will be responsible for establishing a T-1 connection between the County TMC and Downey TMC.

SIEMENS

IEN-CDI Interface Requirements

Background

Los Angeles County has an Information Exchange Network (IEN) with a CORBA-based interface. A number of regional traffic signal management systems will send data to the IEN and accept commands from the IEN. A regional display will provide a graphical interface to the data.

References

This estimate is based on data found in the IEN Recommendations for the Implementation of New Traffic Control System Command/Data Interface Programs document, Final – Revision 5, dated 19 May 2006 (IEN CDI).

Events/Data

The following sections indicate which events and data from the IEN will be supported:

Event Support

Below is Table 2-4 from the IEN CDI document referenced above. The column "Data Supported" indicates which of these event types contain data that will be supported by the Siemens ITS i2 CDI interface. Details of which data for each event type are indicated below.

EVENT TYPE	ENTITY	PRIORITY	Data Supported
IEN_COMMANDRETURN	Command	N/A	NO
IEN_INTERSECTIONINFO	Intersection	Required	YES
IEN_INTERSECTIONRTSTATUS	Intersection	Required	Yes
IEN_INTERSECTIONRTSUMMARY	Intersection	Required Highly Desirable	YES
IEN_PHASE_STATEDATA	Intersection	Highly Desirable	YES
IEN_PEDPHASE_STATEDATA	Intersection	Desirable	YES
IEN_VEHCALL_STATEDATA	Intersection	Desirable	YES
IEN_LASTCYCLE_PHASEDATA	Intersection	Highly Desirable	YES
IEN_TP_PHASEDATA	Intersection	Highly Desirable	YES
IEN_DETECTORINFO	Detector	Required (If Supported)	YES
IEN_DETECTORSTATE	Detector	Required (If Supported)	YES
IEN_SECTIONINFO	Section	Required (If Supported)	YES
IEN_SECTIONSTATE	Section	Required (If Supported)	NO

Data Support

The following are the data elements of each event that will be supported.

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2.4.3.1 IEN_INTERSECTIONINFO
- Intersection ID
- Section ID
- Controller type
- Description ("main @ cross")

2.4.3.2 IEN_INTERSECTIONRTSTATUS:
- Cycle counter, seconds since start of cycle
- Reference cycle counter for the intersection

2.4.3.3 IEN_INTERSECTIONRTSUMMARY
- Signal control mode
- Intersection signal state
- Controller response state
- Preemption type
- Controller alarms (partial)
- Main street green active
- Communication state for the intersection controller
- Timing plan id
- Desired cycle length
- Desired offset
- Actual Offset

2.4.3.4 IEN_PHASE_STATEDATA
- Active green phases

2.4.3.5 IEN_PEDPHASE_STATEDATA
- Active walk phases

2.4.3.6 IEN_VEHCALL_STATEDATA
- Active phases

2.4.3.7 IEN_LASTCYCLE_PHASEDATA
- Length of last cycle
- Total green time for each active phase in the controller's last cycle.

2.4.3.8 IEN_TP_PHASEDATA
- Phase id
- Maximum green time

2.4.4.1 IEN_DETECTORINFO
- Detector data averaging period
- Detector id
- Detector class
- Direction of traffic flow over the detector
- Lane number
- Name of the roadway that contains the detector

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- Weighting factor k

2.4.4.2 IEN_DETECTORSTATE
- Volume
- Average volume
- Detector status
- Speed
- Average speed
- Occupancy
- Average occupancy

2.4.5.1 IEN_SECTIONINFO
- IDs of intersections
- Section id

2.4.5.2 IEN_SECTIONSTATE – not supported

Commands Support

The following commands will be supported.
- Set CDI Plan
- Change Mode
- Release Control