Appendix B
Case Study 1-Access Project

1 Title of Project:

ACCESS project

2 Contact Person:

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3 Electronic Addresses: Not available yet.

4 Application Type:

Regional Network for the retrieval of government information and communication

5 Implementing organizations:

Southern California Association of Governments (SCAG) is the lead agency in implementing ACCESS. Several other agencies assisted in the management and development of the project and representatives from SCAG's jurisdictions assisted with defining system requirements.

6 Mission:

SCAG serves as the Metropolitan Planning Organization for the Los Angeles region and as such is responsible for regional planning issues that relate to transportation and air quality, and for the development of the Regional Comprehensive Plan. SCAG's stated mission is: "to enhance the quality of life of all Southern Californians by working in partnership with all levels of government, the business sector, and the community at large to meet regional challenges and to resolve regional differences." (SCAG, 1991)

7 Date Operational:

Beginning in January of 1996, those cities already having Internet connection will be able to access the system. In March of 1996, cities will begin receiving hardware necessary to setup system and for connecting to the Internet.

8 Purpose of the Application:

Because Southern California Association of Governments is the MPO for the Southern California region, its objectives for the ACCESS project are ultimately regional in nature. The objective of the project is stated by SCAG as being, "to improve communication and cooperation on regional and local issues among jurisdictions within the SCAG region." (page 1, ACCESS project: Project Overview, SCAG, 11/95) Elsewhere it is stated, "The ACCESS project is designed to help facilitate and enrich decision making within the Southern California region. The central goal of the project is to provide information and enabling technology such that Southern California becomes the "most information accessible region in the world."" (page iv, ACCESS project: Jurisdictional Information Booklet, SCAG, 9/17/95) By increasing communication through technology, SCAG hopes to increase participation of SCAG's 190 jurisdictions in regional planning issues such as air quality, transportation and the preparation of a Regional Comprehensive Plan, as well as increasing cooperation and communication between SCAG's jurisdictions.

9 Description of Users:

- All of the 190 member jurisdictions within the SCAG region will receive computer systems that will allow them to access databases and to communicate with one another through Internet connections. The primary users within each jurisdiction will be city planners who will be provided GIS applications and other types of information sharing programs.
- Other users will include transportation planning agencies, economic development agencies, university planning and geography departments, and environmental planning agencies.
- A third category of users will be the general public who will be able to obtain information posted on city home pages, communicate with city officials and departments via email and to access city-sponsored newsgroups.

10 Number of Users:

There are 190 member jurisdictions within the SCAG region.

11 Total Potential Users in Southern California:

There are 16 million people living within the SCAG region who are potential users of the Internet.

12 Application Accomplishments:

The application has not been completely implemented as yet. The computer systems for the jurisdictions are in the process of being procured, and the SCAG server computer is soon to be delivered to the agency.

Most of the applications accomplishments to date have come about in the planning and design stages of the project. With the help of local planners, SCAG has facilitated the development of GIS applications for use with the computer systems that are being provided to the jurisdictions by mid 1996. These GIS applications are designed to work specifically with data provided by SCAG.

The system packages have been put together by SCAG so each jurisdiction will receive standardized computer systems and applications so that the sharing of information among jurisdictions will be made easier.

SCAG has also developed a comprehensive training program for the jurisdictions to instruct them in the use of the computers, the GIS applications and the Internet.

13 Mobility Impacts:

Mobility impact information can be broken into two general categories:

1. Intergovernment information exchange - Information is shared between SCAG jurisdictions. Through the use of file transfer capabilities and email, each city may share reports, meeting agendas, maps and databases electronically rather than physically making trips to obtain that type of information. SCAG also will have the ability to share information with the jurisdictions, including databases updates, transportation and air quality modeling output and information on pertinent grant programs.

2. Public access to government information and services -

a. on-line permitting - SCAG has developed an on-line permitting template that is displayed on the City of Alhambra's home page. It is not operational yet but serves to show cities in the region how they may use the Internet connection to improve city services. This type of electronic transaction allows customers with Internet connection the ability to access information on permits, apply for permits on line and to track permit progress. Electronic permitting may substitute for trips made for the purpose of obtaining permits from city hall.

b. Information such as public meeting agendas, public meeting notification, reports and maps will be made available on line by member cities. Anyone with an Internet connection will be able to access this information electronically eliminating the need for some trips to be made to city hall.

14 Quantification of Mobility Impacts:

15 Technology Overview:

Each member jurisdiction will receive from SCAG:

- Hardware: standalone computer systems which include personal computers, modem, and communications cards for dial-up and ISDN modem connections.
- Software: ArcView 2 GIS package, software for Internet connectivity and an office software package (ex. Microsoft Office) and Netscape, a software for World Wide Web (WWW) access
- Home page setup and design for each city
- Geographic databases
- Internet connection, email, news group development, WWW home page support, and file transfer capability

The jurisdictions will be expected to have subscribed to:

- Thomas Brothers digital database

SCAG, or a contractor chosen by SCAG, will maintain the network's UNIX server.

16 Technology Vendors and Technical Assistance Providers:

- Environmental Systems Research Institute (ERSI) - contracted to provide training program and GIS consulting.

- PSOMAS and Associates - contracted to provide project management and technology design.
- GIS Technology Inc. - GIS applications development.
- Gatekeeper Systems - network applications design and development.
- Phil Naeker Consulting - maintain server (at present time)

17 Facility Location:

The ACCESS network server will be located at SCAG's offices in downtown Los Angeles. Each member jurisdiction will have a computer system delivered to their city offices.

18 Facility Location Change Associated with the Project:

None

19 Block Diagram:

(See attached.)

20 Costs:

Costs for network members are estimated at $600 per year for network connections and an additional $500 per year for access to the Thomas Brother's database.

Cost for the system design, software development, hardware, training and licenses is approximately $1.4 million.

21 Sources of Funds:

SCAG has received funds for the project from Federal Transit Authority (FTA), Federal Highway Administration (FHWA) and TDA planning. The subregions have received funds from FTA and FHWA.

22 Economic Indicators:

There are several SCAG staff members working on the ACCESS project. PSOMAS and Associates has been hired as a contractor to provide project management and user training and support.

23 Market Size:

The potential market includes all motorists, transit users, public transportation agencies, cities and counties within the Southern California Priority Corridor.

24 Issues and Barriers:

The task of implementing the ACCESS project in a large region with many jurisdictions could be considered a major barrier to implementation. Within the SCAG region, there are 13 subregions and 190 jurisdictions. Consequently, this involves organizing and coordinating installation of 190 systems in each jurisdiction and acquainting the users with its operation. In order to solve this problem, 13 Technical Advisory Committees (TACs) will be formed "to facilitate the implementation within the jurisdictions." (Sec. 1-p. 1, "ACCESS project: Jurisdictional Information Booklet," 9/17/95) Each TAC will be made up of a rep from each jurisdiction and a TAC coordinator meeting on a regular basis to coordinate installation of the systems. The meetings are also intended to encourage information exchange and to facilitate responsibility for implementation to these groups rather than SCAG. SCAG serves in a supporting role.

References:

1. "ACCESS project: Project Overview," Southern California Association of Governments, 8/95.
2. "ACCESS project: Jurisdictional Information Booklet," Southern California Association of Governments, 8/95.

Case Study 2-Antelope Valley Child Abuse Network

1 Title of Project:

Antelope Valley Child Abuse Network

2 Contact Person:

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3 Electronic Addresses:

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4 Application Type:

telemedicine

5 Implementing organizations:

University of Southern California advanced Biotechnical Consortium (USC-ABC),USC Advanced BioTelcommunications and BioInformatics Center (ABBC), and Los Angeles County Department of Health Services

6 Mission:

The mission of the USC-ABC is described as being to improve patient care through the use of new telemedicine technologies. USC-ABC plans to accomplish this goal by bringing together industry and the medical community to develop technologies that focus on improving medical information exchange using "high-performance computing and communications." (The Consortium, winter 1994)

7 Date Operational:

1994

8 Purpose of the Application:

The purpose of this application is described as : to use advanced telecommunications technology to improve medical care for children in a rural area who may have been abused.

9 Description of Users:

physicians, child abuse specialists, law enforcement personnel, social services personnel

10 Number of Users:

Not available

11 Total Potential Users in Southern California:

Not available

12 Application Accomplishments:

The Antelope Valley Child Abuse Network is serving as a demonstration project for USC-ABC and the USC Advanced BioTelecommunications and BioInfomaticsCenter (ABBC). The Network connects the LAC+USC Medical Center's Center for the Vulnerable Child/Suspected Child Abuse and Neglect Program in East Los Angeles - a highly regarded child abus ogram - with a hospital in rural Antelope Valley for the purpose of improving care for child abuse victims in a remote community.The Network allows physicians to consult more quickly in real-time over urgent child abuse cases. The USC-ABCand USC-ABBC are seeking through this project to evaluate the cost effectiveness of telemedicine.

13 Events leading to Mobility Impacts:

Distance barriers are overcome by the Network that would otherwise prevent immediate care for abused children.The network allows physicians, children and their families, and law enforcement and social service personnel to avoid travel. Without telemedicine, the trauma specialist or the child and family must travel long distances, 75miles one way, for the child to be examined. The Network allows physicians at the High Desert Hospital to immediately consult with a specialist at the Center for the Vulnerable Child in real time through the use of medical images sent over the Network. Using the Network allows the specialist to consult at a distance without actually being in the room with the child and the physician. The Network makes possible quicker identific† child abusers and ruling out of those who are not. In this way, the Network saves time and trips for law enforcement and social service personnel.

14 Quantification of Mobility Impacts:

No

15 Technology Overview:

The Network provides a high-speed multimodal connection for medical consultation between the Antelope ValleyHospital and LAC+USC Medical Center. Medical information such as color images

of the patient's external injuries and x-ray images are transferred over ISDN lines between the Center for the Vulnerable Child/Suspected Child Abuse and Neglect Program at the LAC+USC Medical Center and the Antelope Valley Hospital. USC's Biomedical ATMNet connects the LAC+USC Medical Center to USC and a JPL supercomputer located at Caltech. The JPL supercomputer provides"3-D volumetric visualization" capability. The consulting physicians are able to review pertinent medical information in real-time over these networks.

The technology equipment, connections and applications used for the ATMNet are as follows:

- Supercomputer: Cray, Thinking Machines
- Network connection: ATM Cell Relay at 155 Mbps (OC3c) provided by Pacific Bell
- Terminals and workstations: Sun SPARC 20/51MSX, IBM RS/6000, Apple Power PCs
- Image servers: IBM RS/6000s
- Applications: 3-D visualization, videoconferencing, clinical information systems, radiology imaging.

16 Technology Vendors and Technical Assistance Providers:

JPL	Sprint
Northrop Grumman	Loma Linda University
Hughes	Advanced Visual Systems (AVD)
All Star Telecom	
Pacific Bell	USC
Apple Computer	IBM
CEMAX	Sun Microsystems
Eastman Kodak	Cisco Systems
Fore Systems	General DataComm
GTE	Knobbe, Martens, Olson and Bear
Langdon Wilson	
Picker International	Newbridge
AT&T	Syn Optics

17 Facility Location:

The Center for the Vulnerable Child is located at the USC+LAC Medical Center in East Los Angeles and the HighDesert Hospital is located in the City of Antelope Valley. The supercomputer is located at JPL's SupercomputerCenter at Caltech.

18 Facility Location Change Associated with this Project:

19 Application diagram:

(See attached.)

20 Sources of Funds:

USC-ABC received a $1.6M Pacific Bell CalREN grant for network connections and $1M for the State of CaliforniaOffice of Strategic Technology and Eastman Kodak. Pacific Bell is also providing a .5FTE for the child abuse program and USC is providing a .5FTE administrator for the program.

Cost for the system design, software development, hardware, training and licenses is approximately $1.4 million.

21 Economic Indicators:

One of the purposes of the Antelope Valley Child Abuse Network as a demonstration project is to evaluate the cost of telemedicine compared to the cost of conventional care. The USC-ABC and USC-ABBC are studying the costs of medical care in this program and comparing them with conventional care at another remote site. Another economic advantage to this type of telemedicine is that the time available for specialist physicians to consult is increased making it possible to reach more
children in a larger geographic area. It is expected that the cost savings with the use of advanced telecommunications technologies in this program are significant.

22 Market Size:

Not available

23 Issues and Barriers:

The technical issues that USC's Biomedical ATMNet sought to overcome relate to the quality and resolution of images used in remote diagnosis. Previously the medical images Lacked the quality required for remote diagnosis for this type of urgent care. The ATM network greatly enhanced the quality of medical images and allowed for use of three-dimensional images by consulting physicians. At speeds of up to 155Mbps, ATMNet allows physicians to consult in real-time using 3-D

medical images, or what is referred to as volumetric visualization.

The Antelope Valley Child Abuse Network also sought to overcome distance barriers that prevented abused children from receiving immediate medical diagnosis and care from experts in the field. The remote High Desert Hospital in Antelope Valley is connected by the ISDN lines to experts 75 miles away at the LAC+USC Medical Center's Center for the Vulnerable Child/Suspected Child Abuse.

References:

1. Alvey, C. et al. "Cost-Reducing Health Care Technologies: Telemedicine and the Vulnerable Child." October, 1994, published onhttp://use-abc3.hsc.usc.edu.
2. George, F. "Re-Inventing Health Care Delivery via Telemedicine," Nov. 1994, http://usc-abc3.hsc.usc.edu
3. "California Research and Education Network (CalREN) Supports USC's Advanced Biomedical ATMNet," 1994, Pacific Bell.

Case Study 3-Davis Community Network

1 Title of Project:

Davis Community Network (DCN)

2 Contact Person:

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D(95617
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3 Electronic Addresses:

City of Davis home page address:
http://www.city.davis.ca.us/

Davis Community Network:
http://www.dcn.davis.ca.us/DCN

4 Application Type:

Community Network

5 Implementing organizations:

City of Davis, University of California at Davis, California Department of Transportation, local businesses, the Davis Chamber of Commerce, Davis school district, a local newspaper, the county library, the community television station, KVIE-TV 6 (public-access cable tv) and members of the community.

6 Mission:

The mission of the Davis Community Network is stated as being "to strengthen the community by providing Internet-based communication, information services and support in order to help its citizens make better decisions, participate in decisions affecting their lives and obtain all the benefits of full participation in the emerging electronic community." (DCN, May 29, 1995)

7 Date Operational:

DCN was brought on line for testing by the "Davis First 50" in May, 1994. The Davis First Fifty are community members who served as the initial pilot group for network evaluation.

8 Purpose of the Application:

(See mission statement.)

9 Description of Users:

Citizens and businesses in the Davis Community are the main targeted users of the network. Because the network is on the Internet, anyone with an Internet connection can access the DCN on-line services.

10 Number of Users:

The Davis Community Network home page averages over 3000 accesses per day. (DCN, 1995) The "Davis Virtual Market" was accessed over 73,000 times during October, 1995. (DCN, 1995) As of November 20, 1995, 1035 subscribers were listed by the network.

11 Total Potential Users in Southern California:

The total potential users in the Southern California region would be all those people who had an Internet connection and an interest in accessing the information provided by the DCN.

12 Application Accomplishments:

The DCN provides on-line access to local government, on-line businesses and access to on-line community events information, community connections via the Internet, email, bulletin board access, and access to newsgroups and mail lists.

13 Events Leading to Mobility Impacts:

The areas in which the DCN may affect travel demand include, but are not limited to:

1. Telebusiness and teleshopping - DCN subscribers may shop on line from their homes. DCN has created the Davis Virtual Market, an on-line market featuring businesses in the community. Included on the Virtual Market home page are listing of restaurants, professional services, organizations, technology vendors and other small businesses in the community. The listing of products and menus allows for comparison shopping by subscribers which may eliminate the need for those types of trips. Davis Food Coop teleshopping project plans future use of electric vehicles for delivery of goods. There are also plans for the provision of forms pages which would allow subscribers to order over the network.

2. Telegovernment - DCN subscribers have access to government information and services replacing trips to city hall. At the present time, the Davis Electronic City Hall provides listings of employment opportunities and city government information such as meeting minutes and agendas. These on-line services would eliminate trips to the city hall because people would have access to them on their computers at home or at their place of business. The DCN plans to have on-line business and employment application prototypes by June 1996, and downloadable forms for all city permits and applications in the future.

3. Telecommunity - DCN subscribers can access and post community events from the Community Calendar web page, which allows people in the community access to information on community events on-line rather than traveling to the community events office.

14 Quantification of Mobility Impacts:

In process at the Institute for Transportation Studies at University of California Davis with Pat Mokhtarian as principle investigator. (See http://www.engr.ucdavis.edu/~its/telecom/ for more information.)

15 Technology Overview:

DCN operates and maintains the network which provides subscribers with access to newsgroups, email, bulletin boards, mail lists and the Internet with WWW access.

Network connection technology provided by or to be provided by DCN includes modems, ISDN, ATM and CATV. At present, in addition to POT (plain old telephone) modem connections, DCN has recently begun offering ISDN connections. As of February 1996, only "dedicated" ISDN connections were being offered. Testing is in the process of being conducted by the DCN on " contended" ISDN lines, which multiple users share one ISDN connection.

Small scale tests are being conducted on the use of wireless and CATV technology. Research on wireless is concentrating on the "mobile worker" and the "office of the future" (DCN, 2/21/96, email) and testing different levels of connectivity: "wireless portable docking, wireless LANs, wireless building-wide networks (e.g. the library), wireless MANs ... and wireless wide area networks ... ." (DCN, 2/28/96, email)

Technical Equipment:

UNIX SPARC 10 (donated by SUN Microsystems): 32 mb of memory, 2.1 gigabytes storage, and a tape backup unit.

SPARC1 (donated by UCD) with 16 mb memory, 2 internal 1.2 gb hard disks. WWW user interface (LYNX and Mosaic)

Mac IIci for user support (on loan from UCD)

16 Technology Vendors and Technical Assistance Providers:

- Davis Community Television (DCTV) - sub contracted to provide training, community outreach, marketing, and account management.
- American Cabling and Communication (AC&C) - subcontractor providing low-cost modem services, assists University in evaluation of network technologies and negotiates for loans and equipment donation.
- InterNIC - provides domain space.
- QualComm
- BARRNet/BBN
- Sun Microsystems
- California Department of Transportation
- University of California at Davis
- Tetherless Access Ltd.

17 Facility Location:

The DCN staff offices and Davis Community Television are located at 1623 Fifth Street, Suite B, Davis, California 95616.

DCN network computers are housed at the computing center at the UCD campus.

18 Facility Location Change Associated with this Project:

In 1994, it was decided to move the location of the network offices and transfer control from the University of California at Davis to the Davis Community Network.

19 Block Diagram of Application:

(See attached.)

20 Costs:

Subscribers fees for DCN connection amount to between $15 - $180 per month (as of 11/95) depending on type of account. The least expensive are individual and family accounts with 14,400 or 28,800 modems. Other types of accounts include multiple-user, dedicated line and ISDN. ISDN connections cost up to $290 per month. A DCN home page costs $100 a month for the connection.

21 Sources of Funds:

DCN received a CALTRANS three-year research grant of $500,000 and 20 percent match from University of California at Davis. The DCN also received part of a NTIA grant award which DCN jointly applied for with other members of a 15-county regional network.

City of Davis provided approximately $23,000 for the test pilot project for providing on-line city information. The City also provided DCN a loan of approximately $32,000 in start-up funds.

DCN staff is currently seeking other grants.

DCN is also supported by volunteers, amounting to approximately 500 hours a month, (DCN, 11/95) and equipment donations.

22 Economic Indicators:

UCD provides .20 FTE staff supported by the Caltrans grant money and matching UCD funds.

DCN has a paid staff of nine employees totaling 3.85 FTE. Volunteers represent 3.5 FTE.

Goods and services have been purchased by DCN from Davis Community Television and American Cabling and Communication. The dollar amount from these vendors is unknown at present.

The Davis Virtual Market (DVM) (http://www.dcn.davis.ca.us/DME/), a part of the DCN, is a "webpresence" company which provides Web pages for businesses and individuals. The DVM helps to promote business on the Internet. For example, "Pizza Day" is sponsored each month on the DVM where contests and promotions help to increase traffic to the pizza parlors advertising there.

The DCN offers a number of success stories of businesses who have established a presence on the DVM. A local comic book store had been a storefront operation before taking part on the DVM. After obtaining a presence on the Web, the store now has a mail order operation, sells space on its website to other businesses, and is representing other game and publishing companies, both U.S. and foreign on their Web site. Another example is that of a mail-order computer business that increased its business through a Web site with on-line forms and ordering.

23 Market Size:

24 Issues and Barriers:

Because of initial uncertainty over technology options, several pilot projects were conducted to evaluate the effectiveness of the network, including the initial pilot projects and one to evaluate the provision of city information over the network. DCN is in the process of working towards an Electronic City Hall and presently offers a variety of city services over the network. City departments listed on the Davis City Government home page are:

- Administrative Services
- City Council
- Fire
- Parks and Community Services
- Public Works
- General Plans Committees
- Financial.

DCN is continuing to research and seek out grant money for continuing operating expenses and development.

DCN is at present working on legal issues that deal with the security of providing on-line applications for employment and business license applications.

Other barriers encountered by DCN relate to ISDN tariffs and PUC regulatory activities.

References:

1. Davis Community Network on-line information, http://www.city.davis.ca.us/ http://www.dcn.davis.ca.us/DCN
2. information provided by email from Julie Cross and Vicki Suter of the DCN

Case Study 4-Southern California Intelligent Transportation Systems (ITS) Priority Corridor

(NOTE: The ITS Priority Corridor showcases a group of telecommunications applications that indirectly affect travel behavior by providing information about the condition of traffic on the highways. Intelligent Transportation Systems are not within the scope of the Telecommunications Cluster, but this document is included for reference.)

1 Title of Project:

Southern California Intelligent Transportation Systems (ITS) Priority Corridor

2 Contact Person:

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3 Electronic Addresses:

Showcase Web:
http: //www.anatcp.rockwell.com/showcase/

4 Application Type:

Intelligent Transportation Systems (ITS) - This term covers a broad range of information technologies designed to improve traffic efficiency on the infrastructure.

5 Implementing organizations:

Federal Highway Administration (FHWA), Federal Transit Administration (FTA), California Department of Transportation (Caltrans), California Highway Patrol, Southern California Association of Governments, South Coast Air Quality Management District, Los Angeles Metropolitan Transportation Authority, Orange County Transportation Commission, the cities of Los Angeles, Irvine and San Diego, San Bernardino Association of Governments, Riverside County Transportation Commission, San Diego Association of Governments, Private Sector Organizations (e.g. Automobile Companies, Traffic Conditions on Radio and Television)

6 Mission:

The mission of the Southern California ITS Priority Corridor Steering Committee is stated as being "to provide a forum for the development of the Southern California ITS Priority Corridor Strategic Deployment Plan and Showcase Project (Corridor Plan) for deployment of Intelligent Transportation Systems in the Southern California ITS Priority Corridor.

7 Date Operational:

On March 29, 1993, the FHWA identified the Southern California ITS Priority Corridor as one of four areas in the United States that would showcase and deploy ITS technology.

The first generation operations, the Field Operational Tests (FOTs), began in 1994 and 1995 and are expected to be completed in 1996. The studies for development of Strategic Deployment Plans for each region within the Corridor and one Corridor-wide study are beginning in early 1996. One exception, the San Diego study, which began in August, 1995.

8 Purpose of the Application:

The Southern California Priority Corridor was established by Congress to showcase and to bring about deployment of ITS technologies with the goals of improving mobility and traffic safety on the roads, strengthening the economy, and reducing energy demands and environmental impacts.

9 Description of Users:

Cities and counties in Southern California, public transportation agencies, and law enforcement agencies will use ITS technologies to improve traffic flow on streets and freeways, inform drivers about traffic conditions, collect traffic data, report potential traffic problems and deploy crews for rapid clearance of incidents causing congestion.

Motorists and transit riders will use the ITS technologies to obtain up-to-the-minute traffic information.

10 Number of Users:

Motorists and transit users in Southern California

11 Total Potential Users in Southern California:

All Southern California cities, counties, law enforcement agencies, transportation agencies, public and private transit companies, motorists, and transit riders within the Priority Corridor.

12 Application Accomplishments:

The main objective of the Priority Corridor is the deployment of ITS technologies in the Southern California area. There are several major efforts now under way within the Corridor towards this objective. These efforts are in the form of studies to develop deployment strategies, and in the form of actual projects. There are studies being conducted to develop ITS deployment plans, one for each of four regions in the Corridor and one overall Corridor deployment plan.

Projects include:

- Showcase Project - The purpose of this project is to demonstrate a major intermodal transportation management and information system within the Corridor. This project involves two phases: the scoping phase to be completed in October 1996 and the high level design phase.
- Early Start projects - A part of the larger Showcase Project, these projects are directed at early deployment of ITS technologies in order to demonstrate to the public and stakeholders their value to the ITS program and to refine the technologies. The projects that have received federal funding are:
  - Travel Tip - This Orange County Corridor pro ject is expected to demonstrate an Advanced Travel Information System that can be linked to the corridor and a prototype that can be deployed in the other parts of the corridor.
  - CAD/Voice Three-Way Emergency Dispatch Interface (San Diego)
  - Jack Murphy Stadium ATIS (San Diego)

  The start date for the next six Early Start candidate projects could be 1996. These projects have been selected by the Southern California ITS Corridor Steering Committee as projects that will deploy other types of applications within the Showcase Project. The Steering Committee is presently seeking Federal funding for these projects. These projects are:
  - Showcase Kernel - The purpose of the Showcase Kernel is to integrate all the Showcase Projects under one core system. (Corridor Wide)
  - Integrated "Modal-Shift Management" System - a traveler information system that will provide real-time transportation information. (Caltrans District 7 and Partners from Los Angeles and Ventura County areas.)
  - San Diego Transit Management and Information System - This system would provide real time information to transit planners and dispatchers to improve transit efficiency. (San Diego)
  - San Diego Intermodal Transportation Management and Information System prototype architecture for creating a multimodal "Transportation Management System" from the current single-mode Caltrans District 11 Transportation Management Center (TMC). This system is planned to be compatible with other Caltrans District TMCs.
  - Inter Regional Rideshare Data Base Linkage - intended to provide a link between SCAG's and SANDAG's rideshare and transit databases, for the purpose of providing this information to travelers and commuters who cross county lines within the Corridor.
  - Intermodal and Jurisdictional Integrated Network Environment (IMAJINE) This technology is intended to integrate freeway and arterial street operations in an area in South East Los Angeles County that is heavily traveled and which crosses multiple jurisdictions.
- Field Operational Tests:
  - Integrated Ramp Metering/Adaptive Signal Control - an ongoing project designed to balance traffic flow in and around the I-5/I405 area.
  - Mobile Surveillance - an ongoing project located in the city of Irvine involving portable surveillance and detection for highway conditions.

- "Scoot" Adaptive Traffic Control System - an ongoing field test located in Anaheim for adaptive signal timing
- Smart Call Box - another ongoing project located in San Diego designed to collect traffic data
- Spread Spectrum Radio Traffic Interconnect - uses spread radio spectrum technologies to communicate with traffic signals
- HELP (Heavy Vehicle Electronic License Plate) - an ongoing project used for elec tronic clearance of commercial vehicles

◆ California Advanced Testbed - a project slated to begin in early 1996 that will be designed as a cooperative research, evaluation and implementation project designed to operate across jurisdictions in order to better manage traffic and transportation.

◆ Southern California Smart Traveler - an 800 phone number for accessing traveler information throughout Southern California

◆ Smart Corridor - a project, in operation since the 1994 Northridge earthquake, designed to provide real-time transportation information, emergency response and traffic management in the Santa Monica Freeway Corridor.

13 Events leading to Mobility Impacts:

ITS allows the existing transportation system to operate more efficiently, without adding new infrastructure. There are two general areas in which ITS technologies accomplish this, these are:

◆ The provision of real-time, interregional traffic and route information within the Corridor to motorists and transit riders so that they can make better travel decisions; and

◆ Managing congestion for better traffic flow through adaptive and coordinated signal timing and ramp metering

14 Quantification of Mobility Impacts:

Telecommunications from within the scope of the Strategic Deployment Plan, qualitative analysis of mobility impacts of the first projects are planned. The Southern California Association of Governments may do future quantitative analysis of mobility impacts of ITS and Telecommunication applications and FOTs on a limited scale.

15 Technology Overview:

A broad range of technologies are included under the umbrella of ITS. At the present time, the advanced technology efforts within the Southern California Priority Corridor include technologies that would:

◆ Create interregional, multimodal traveler information systems;

◆ Use "Spread Spectrum" radio signals to coordinate traffic signals;

◆ Allow for electronic license plates for commercial vehicles;

◆ Integrate ramp metering and create adaptive signal controls;

◆ Allow electronic collection of traffic data;

◆ Allow for quicker emergency response;

◆ Allow the traveler to access real-time traffic information;

◆ Create a mobile surveillance unit for collection of data on events affecting traffic on the freeways such as accidents and construction projects;

◆ Allow real-time computer-assisted traffic and transportation management and response;

◆ Integrate all ITS technologies on a network system type. and

◆ Create multimodal Travel Management Centers.

16 Technology Vendors

Rockwell and NET will design the Showcase Project. Other technology vendors include: Transportation Corridor Consultants; Parsons, Brinckerhoff, Quade and Douglas; Farradyne; JHK Associates; and BRW.

17 Facility Location:

Ongoing projects and studies are located throughout the Corridor area, including the cities of Anaheim, Irvine, San Diego and Los

Angeles, and the counties of Los Angeles, Orange, Riverside, San Bernardino and San Diego. Including Caltrans Transportation Management Centers.

18 Facility Location Change Associated with this Project:

Transportation Management Centers: Caltrans, Transit Operators, Cities, Counties.

19 Application Diagram :

To be available in components of the Southern California ITS strategic deployment plans being developed in 1996-1997.

20 Costs:

Approximately $1.8 million has been approved for development of the Strategic Deployment Plan.

Another $92,000 has been approved for the "Early Deployment Plan for North American Commercial Intermodal Transportation System and Intermodal Border Crossing Operations.

The total budget for the FOTS--Integrated Ramp Metering/Adaptive Signal Control, Mobile Surveillance, "Scoot", Smart Call Box, Spread Spectrum Radio, International Border Electronic Clearance and HELP--have been budgeted approximately $10.6 million.

The Southern California Smart Traveler project has been budgeted approximately $2 million per year. The total budget for the Smart Traveler is approximately $47 million.

The budget for the Athena project totaled $2.3 million.

The total budget approved for the FOTs is approximately $17 million.

The total cost for all the Early Start projects is $32.69 million of which $21.17 million are federal funds. Cost for each Early Start project is broken down as follows:

- Showcase Kernel - $.990 million (funded)
- Integrated "Modal-Shift Management" System - $1.92 million (federally funded)
- San Diego Transit Management and Information System - $15.7 million ($3.0 federally funded)
- San Diego Intermodal Transportation Management and Information System - $5.625 million ($1.825 federally funded)
- Inter Regional Rideshare Data Base Linkage - $.210 million
- IMAJINE - $6.820 million ($2.4 federally funded)
- CAD/Voice Three-Way Emergency Dispatch Interface - $.750 million (federally funded)
- Jack Murphy Stadium ATIS - $.625 million (federally funded)

21 Sources of Funds:

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 authorized approximately $250M to be spent in ITS Priority Corridors. State or local governments are expected to provide a 20% match to money they have received. Other private and public monies are being sought.

22 Economic Indicators:

One of the objectives for the ITS Priority Corridors is to improve the economy throughout the region and state by working with private companies to help develop ITS technologies. It is hoped that by showcasing ITS within Priority Corridors, use of the ITS technologies will increase significantly providing benefits to the economy. The Federal government goal is 80% private and 20% public funding.

23 Market Size:

The potential market includes all motorists, transit users, public transportation agencies, cities and counties within the Southern California Priority Corridor.

24 Issues and Barriers:

The establishment of the Priority Corridor created the need for cooperation and coordination among the multiple jurisdictions and private organizations within the Corridor area. The Southern California Priority Corridor Steering Committee was formed to help coordinate and integrate ITS activities within the Corridor so that an interconnected communications system can be developed and traffic flows crossing jurisdictions can be better managed.