Telecommunications Deployment Strategy

A Key Strategy in Southern California's Plan to Improve Mobility and Air Quality

Executive Summary

SOUTHERN CALIFORNIA

ASSOCIATION of GOVERNMENTS

Table of Contents

Southern California Association of Governments
Mission Statement

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.

How to View this Document

Use the navigational tools at the top of the screen to move through the document. The arrows take you forward or back respectively. The table of contents contains hypertext links to each chapter. Click on the blue type to take you to a chapter of interest to you. Bookmarks have also been set up to allow you to more easily proceed through-out the document. These bookmarks can be made visible by clicking on the second tool from the left in the tool bar. Once the bookmarks are visible you can click on these to take you to a new chapter.

You may read this document entirely from your screen or you can print pages, sections or the complete text from your local printer. Use the magnifying glass tool in the control panel to zoom in and out of areas which you wish to read or review more closely.

The third icon from the left in the tool bar allows you to display the page layout. With the page layout visible, you can click on a page icon to take you to that respective page.

We hope that you enjoy this electronic visit to the Southern California Telecommunications Deployment Strategy Report.

Regional Council Members

Exhibit 1
SCAG Regional Map

VENTURA

LOS ANGELES

SAN BERNARDINO

ORANGE

RIVERSIDE

IMPERIAL
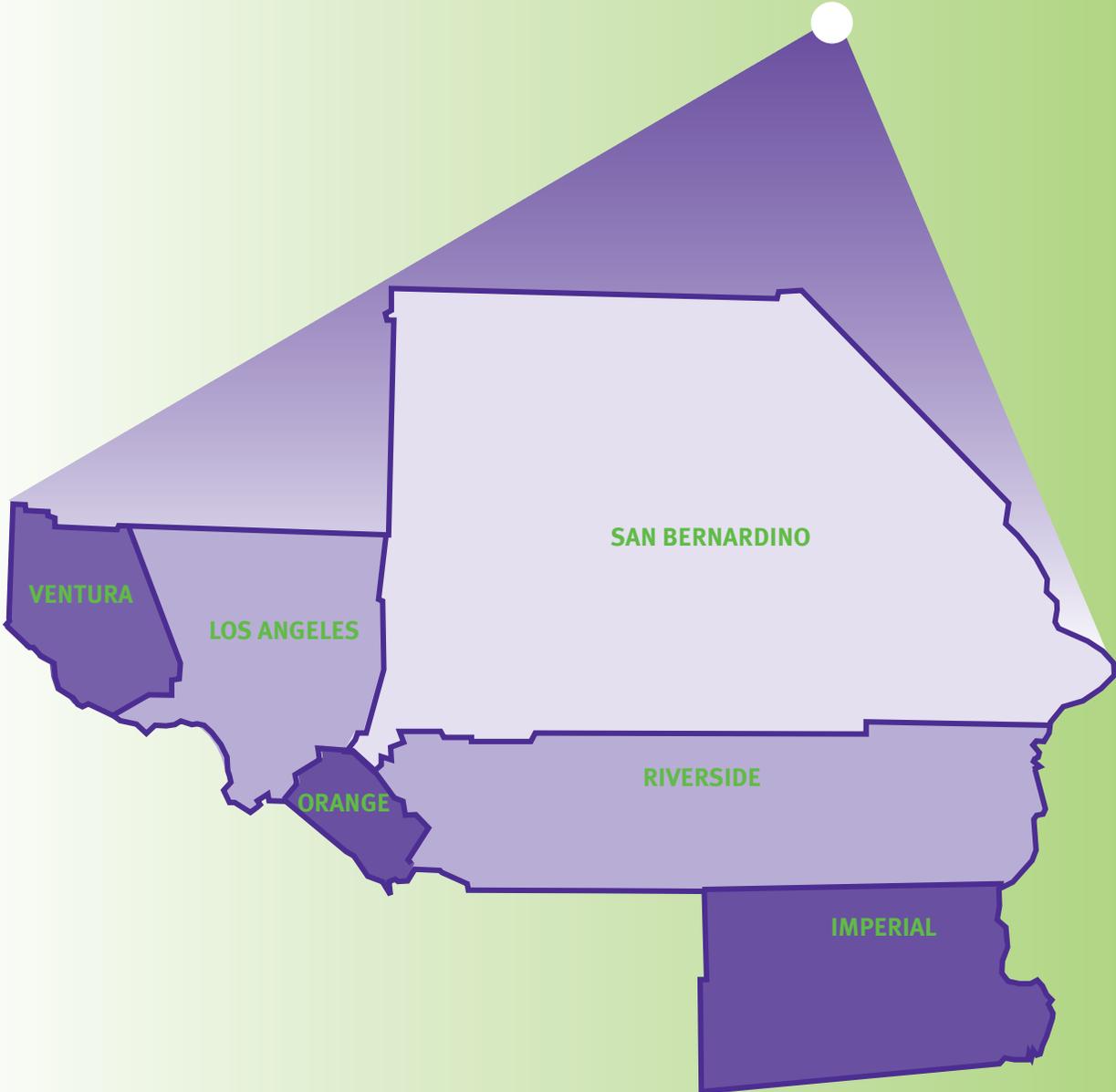
The Southern California Telecommunications Deployment Strategy described in this summary provides the framework for the Southern California Association of Governments (Association), an agency whose purpose is regional planning and coordination ; and the Southern California Economic Partnership (The Partnership), a business-government civic coalition, to accelerate technology deployment. This strategy addresses telecommunications infrastructure, applications, and policies, and their relationships to mobility, air quality, energy consumption, and the economy.

Background

The Partnership stakeholders are professionals from business and government authorized by their organizations to participate in order to influence and be influenced by its work. Each one of the five different Industry Clusters within the Partnership focuses on a different advanced transportation technology: electric vehicles, alternative fuels, smart shuttles, intelligent transportation systems, and telecommunications.

The Telecommunications Deployment Strategy evolved from a response to the Northridge earthquake of January 1994, the direction set for the advanced transportation technology in the Association's 1994 Regional Transportation Plan, and the South Coast Air Quality Management District's (SCAQMD) adopted 1994 Air Quality Management Plan. California Department of Transportation (Caltrans) funded much of the development of this Telecommunications Strategy, as part of a collection of projects on the use of telecommunications in the response to emergencies, and the on-going management of the state transportation system.

As shown on the map in Exhibit 1, this region covers the six counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The Association is the largest Council of Governments in the nation, with a population of over 13 million people and covers an area of 38,000 square miles. SCAQMD covers the counties of Orange, most of Los Angeles, and the western parts of Riverside and San Bernardino only.

The Challenge of Mobility

Air quality in the Los Angeles basin is the worst in the nation, impacted by a severe traffic congestion condition. In the year 2015 "congestion on regional streets and highways will be greater, traffic movement will be slower, and the duration of traffic delay will more than triple," according to a forecast in the 1994 update of the Regional Transportation Plan adopted by the Regional Council (70 board members) of the Association.

The graph in Exhibit 2 illustrates the problem by showing the 1994 Plan forecast for average daily vehicle trips in Southern California for the years ahead, out to the year 2015. Note that the starting point for the growth shown is the 1990 average level of trips in the region: 35,416,000 trips per day! The solid line represents a forecast that assumes that there are no extraordinary public policy initiatives to reduce trip-making in the years ahead. The dotted line represents a forecast for a reduced amount of vehicle trips to result if the Regional Transportation Plan of new lanes, more use of transit, road pricing, more telecommuting, and other innovations are followed. The reduction is unfortunately only about 1.9 percent in a region where growth from one year to the next is expected to be 1.4 percent. More needs to be done.

As one response to the challenge of air quality and mobility, public policy of both Southern California local governments and the State of California is to increase the use of telecommunications to move information instead of persons and goods. Moving information by telecommunications occurs when people use telephones, pagers, fax machines, computer modems, Internet, voice mail, electronic mail, office computer networks, video conferencing, cash machines, credit or debit card authorization, bar scanners, electronic kiosks, satellite services, over-the-air or cable television, or radio.

Telecommunications provide important mobility options for people and organizations in many distinct ways. For example, electronic terminals in shopping malls are letting people conduct business with banks, the post office, public transit, and other businesses and government agencies then and there instead of traveling to additional destinations. Transmitting medical images like X-rays

Deployment Strategy. The Outreach program consisted of a series of newsletters and seminars, plus the publication of a telecommuting and alternative office implementation manual for Southern California. Implemented by the Los Angeles County Metropolitan Transportation Authority, this public-private partnership focused upon education and training as a means of accelerating adoption of telecommuting by 1,850 information-based employers in Los Angeles County. In addition, the Outreach program responds to potential disasters like the Northridge earths-

Exhibit 2
Baseline and Plan for daily vehicle trips in six counties of Southern California
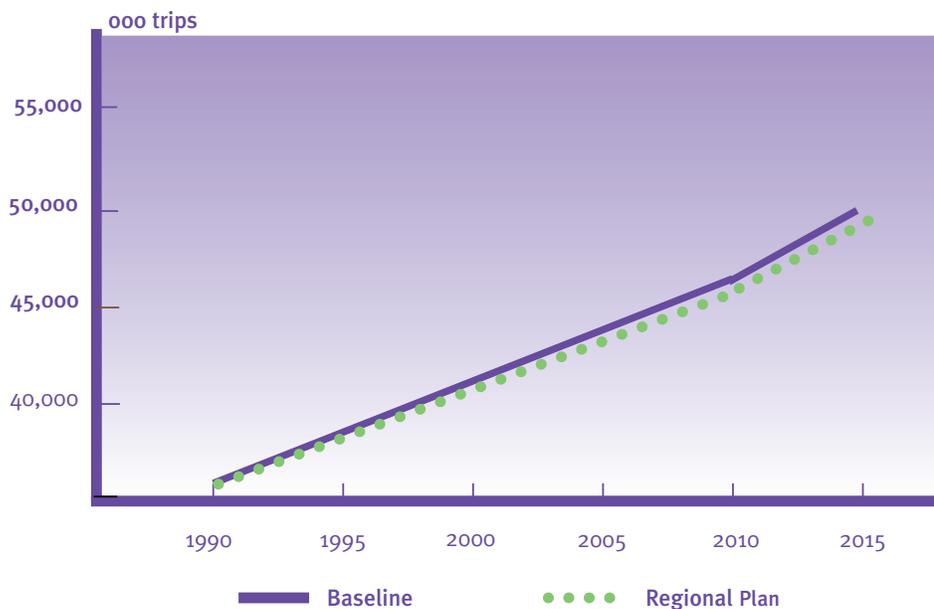
Source: Regional Transportation Plan, 1994

and CAT scans over fiber optics can save traveling by patients, doctors, radiologists and couriers. Other applications categories include telework (telecommuting and other practices that changes the location of workers), electronic shopping, distance learning, electronic government, and entertainment. A more complete list of telecommunications applications that can have an impact of trip making is shown in Exhibit 3.

Telecommuting — employees using phones and computers to work regularly or occasionally at home or closer to home in centers — is the leading example of using telecommunications as a travel alternative. In fact, because telecommuting and the research and literature studying it are well-developed, a Los Angeles County Telecommuting Outreach program was conducted as an adjunct activity to development of the Telecommunications

quake by assisting businesses to maintain productivity even though access to their facilities has been disrupted. See Appendix A of the full Telecommunications Deployment Strategy report for a complete project description and lessons learned.

Despite its importance, work-related commuting amounts to only 21 percent of Southern California driving. Telecommunications can also be applied to reduce travel in the remaining 79 percent of trips. Examples include using telephone and video conferencing instead of driving to community gatherings, business meetings, and professional consultations; or taking a vocational training or college course by using computer communications in the workplace instead of going to a campus classroom in the evening.

Exhibit 3

Generic telecommunications applications with travel impacts

Distance learning	Electronic entertainment
Electronic voting	Electronic home banking
Electronic versions of newspapers and magazines	Electronic government
Home monitoring of medical patients	Public safety applications
Videoconferencing between college classrooms	Telehealth
Teleshopping	Traveler information services
Telework facilities exchange	Telework/telecommuting from telework centers
Telelogistics	
Audio or video teleconference meetings	
Community networks	
Home access to commercial on-line services	
On-line access to government documents through kiosks	
On-line educational services and communications	

Exhibit 4

Examples of existing telecommunications applications in Southern California

Imperial Co.	• LightLink Internet Access Server in El Centro.
Los Angeles Co.	• The Blue Line Televillage being set up by the Los Angeles County Metropolitan Transportation Authority at the Compton Transit Center.
	• CityTel network serving the City of Long Beach is the nation's first citywide ISDN telecommunications network.
	• A 1995 NII Awards Finalist, the Santa Monica Public Electronic Network provides electronic mail, online conferencing, and public access to government information to all citizens.
Orange Co.	• California Community Colleges have been offering televised courses over public television broadcasting stations and local cable channels.
	• The Irvine Unified School District is a pioneer in the use of interactive cable television for teaching classes for children who are distributed over many separate school buildings.
	• A 1995 NII Awards Finalist, the Internet Payment System created by First Virtual Holdings, Inc. of Huntington Beach provides a safe, easy, economical means for buying and selling information and goods over the Internet.
Riverside Co.	• CORNET, County of Riverside Internetwork, provides interagency communications and information exchange among local governments and educational institutions.
	• The Consolidated and Coordinated Courts of Riverside County have established a cross-court document imaging system to allow document filings for any court to be made in any court facility countywide.
San Bernardino Co.	• A graduate-level, mentored on-line seminar demonstrates an alternative learning environment to the simulated lecture model of videoconferencing and the correspondence course model used in televised courses.
	• An interactive video signal links the jail and the courthouse, instead of having to transport prisoners to the judge.
Ventura Co.	• California State University Northridge has a distance learning program offered via video telecommunications at its satellite campus in Ventura and at the Antelope Valley Telecenter.
Region-wide	• The InFoPeople Project provides public access to the Internet through Public Libraries throughout California, including the six counties of the Southland.
	• The Association of Governments ACCESS project is in development to provide access to maps and the Internet in local government offices throughout Southern California.

Telecommunications in Southern California

Telecommuting and other telecommunications deployment — meaning the increasing societal usage of telecommunications — are advancing rapidly throughout the modern world. Thousands of telecommunications development and deployment projects are underway now in organizations and households throughout Southern California. Examples of leading organizational projects in each of the six Southern California counties are shown in Exhibit 4. However, apart from forward thinking policy leaders in organizations such as the Southern California Association of Governments, the Southern California Economic Partnership, the South Coast Air Quality Management District, the State of California Department of Transportation, and the Southern California Telecommuting Partnership, most people in the region, including the majority of government and business leaders, are not planning telecommunications applications with mobility impacts as an explicit goal.

Telecommunications applications are usually implemented to enhance sales, improve customer service, cut costs, and/or increase productivity. Those applications have the potential to support and spur economic growth and consumption, and expand knowledge of new people, places, and events to visit. Telecommunications impacts on vehicle travel encompass trip substitution, trip generation, and trip modification simultaneously.

A new way of thinking about telecommunications and travel needs to be widely learned. Those people who are already aware of the impacts of telecommunications on mobility are presenting diverse ideas on what government and business could do collectively in order to realize a greater public mobility benefit. A consensus on what the Southern California region should do collectively needs to be formed.

A Strategy for the Southern California Region

The mission of this strategy is to accelerate the deployment of telecommunications with an emphasis on improvement of mobility, access, and air quality. With the increase in use of telecommunications comes other important derived benefits: energy savings, business opportunity, job creation, and enhanced organizational productivity.

The Strategy presented in this document provides a visible process of business-government cooperation for highlighting and replicating success in using telecommunications to augment and reduce travel associated with everyday living and business activities. It provides approaches and actions to cause change in how telecommunications is deployed.

The desire for both focus and breadth in the face of inevitably limited public and private resources led to the creation of a Strategy with the following characteristics: Flexible in scope of technology and types of benefits pursued, leveraging existing and future telecommunications network infrastructure and applications, highlighting and building on successful market-driven examples of what is sought, identifying issues and gaps that block deployment, providing a database for measurement and evaluation of mobility and other impacts, and manageable over a period of many years.

Goals of the Strategy

The overall goal is to achieve an improvement in the present pattern of telecommunications deployment that results in a dramatic change in travel behavior in the region over the next 25 years.

1 Expand the market share of information exchange, transactions, interactions, and relationships that are fulfilled through telecommunications access instead of by vehicle trips.

2 Reduce the barriers to — and create new incentives for achieving — the full market potential of telecommunications for mobility and access improvement.

3 Assist local government and organizations to design and implement applications that expand electronic access to services and work locations.

4 Assist organizations to design and implement applications that reduce vehicle trips in logistics systems.

5 Create an integrated, detailed understanding of how the quality and distribution of telecommunications infrastructure deployment impacts mobility, air quality, and the regional economy.

Objectives of the Strategy

The objective is a significant program of telecommunications deployment acceleration through the year 2020. The strategy continues the objective in the 1994 RTP of 10.4% for home to work trips in 2015 for telecommuting and working at home. In addition, the strategy aims to attain a higher reduction in daily person trips from all other telecommunications applications, based on policies and actions that go beyond the 1994 plan. (The new numerical objective is evolving through the analysis of alternatives developed for the 1997 RTP).

1 Document mobility and access improvements from teleservice, telework, and telelogistics, as well as resulting emission reduction and energy conservation results.

2 Indentify barriers to deployment of telecommunications, and action(s) to eliminate or ameliorate them.

3 Establish disaster preparation, travel saving telework and teleservice procedures that are well exercised routinely in normal conditions and which are also immediately available to keep organizations operating in the aftermath of earthquakes, storms, and other transportation disturbances.

4 Assist transportation planners using a telecommunications activity time series and forecast process that is comparable to the trip volume time series used by regional transportation planners.

The Strategy Process

In response to the mobility challenge and the telecommunications deployment opportunity, the Telecommunications Deployment Strategy creates a systematic, continuous process that incorporates the steps shown in Exhibit 5.

The Strategy establishes two parallel, mutually supporting processes: One is the Strategic Marketing Process carried out by the Southern California Economic Partnership, shown in the green ovals on the left. The other is an Analysis and Planning Process performed by the Southern California

Association of Governments, described by the purple boxes at the lower right of the Exhibit. These two processes create policy to influence the ongoing market process of telecommunications development shown in the ovals in the middle of the Exhibit.

The forces of the market, including technological innovation and user demand for products and services that are applied to meet user needs, are and will continue to be the main force behind the deployment of telecommunications. The Telecommunications Deployment Strategy operates to influence market forces toward more emphasis on development and deployment of applications that reduce vehicle emissions through modified trip-making behaviors.

1 The Strategic Marketing Process in the green ovals of Exhibit 5 is carried out by the Southern California Economic Partnership, and works as follows:

Following the model that has proved successful in advancing the deployment of electric vehicles, a Telecommunications Cluster Advisory Group made up of business and government leaders in telecommunications has been formed. The Group provides advice and counsel to The Partnership staff and board on how to influence the dynamic telecommunications market toward a greater emphasis on mobility improvement. {The Charter Members of this Advisory Group are listed under acknowledgements}.
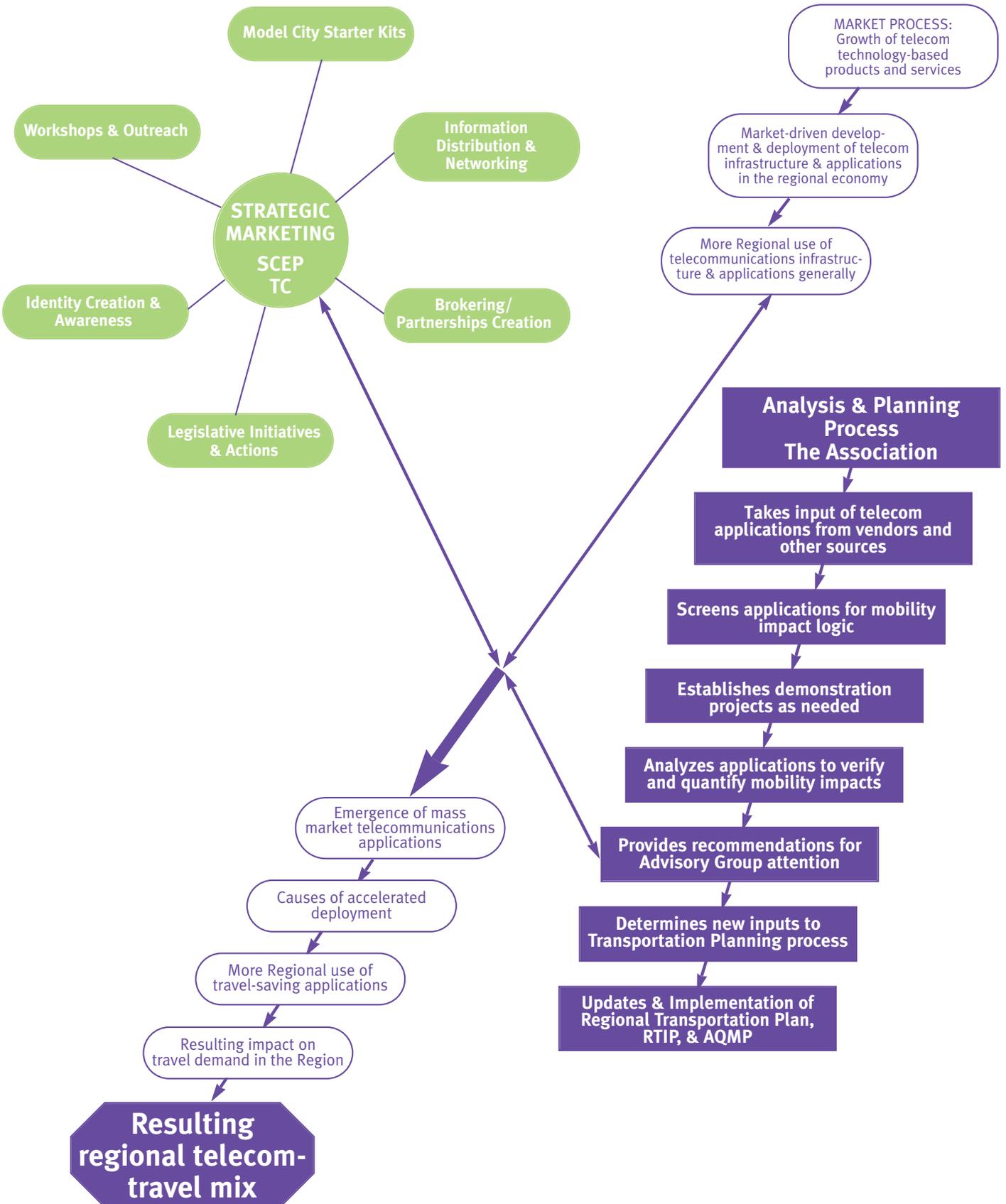
The Partnership applies the same market development strategic planning to each of the five technologies it has been given the mission to accelerate. The approach is multi-disciplinary, totally integrated, constantly evolving, and consists of:

1 Deployment education and guidance in the form of Model City Starter Kits that contain information on implementation rationale, planning and implementation worksheets, and training and safety requirements and curriculum.

**2** Workshops and outreach to generate additional interest and understanding of technology deployment.

Exhibit 5

Public-Private Process to Accelerate Telecommunications Deployment

Model City Starter Kits

Workshops & Outreach

Information Distribution & Networking

STRATEGIC MARKETING SCEP TC

Identity Creation & Awareness

Brokering/ Partnerships Creation

Legislative Initiatives & Actions

MARKET PROCESS: Growth of telecom technology-based products and services

Market-driven development & deployment of telecom infrastructure & applications in the regional economy

More Regional use of telecommunications infrastructure & applications generally

Analysis & Planning Process The Association

Takes input of telecom applications from vendors and other sources

Screens applications for mobility impact logic

Establishes demonstration projects as needed

Analyzes applications to verify and quantify mobility impacts

Provides recommendations for Advisory Group attention

Determines new inputs to Transportation Planning process

Updates & Implementation of Regional Transportation Plan, RTIP, & AQMP

Emergence of mass market telecommunications applications

Causes of accelerated deployment

More Regional use of travel-saving applications

Resulting impact on travel demand in the Region

Resulting regional telecom-travel mix

3 Technology/industry identity creation and awareness generation (logos and slogans) to help give a singular identity, purpose and synergy to deployment activities.

4 Information distribution and networking support creating a breakthrough, advertising-supported consumer friendly Web Site, to encourage feedback from stake-holders and as a clearing house of information.
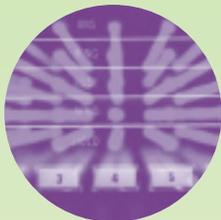
5 Partnership creation/brokering; and

6 Legislative initiative and actions to provide testimony on issues, and share potential direction with stakeholders to assist with action strategies.

Whether looking at removing barriers or establishing incentives, the participants in the Advisory Group meetings work to generate ways to motivate and assist business, government, and other organizations to move forward to implement actions and policies developed through The Partnership process.

2 The Analysis and Planning Process of the Telecommunications Deployment Strategy as shown in the purple boxes of Exhibit 5 is carried out by the Southern California Association of Governments.

1 Build, maintain, and grow a knowledge base of documented case studies of existing, effective, market-driven telecommunications applications that have a logical linkage to mobility-enhancing changes in the location of activities and facilities, and in the movement of people and goods. Data on applications with positive mobility impacts will be displayed to the general public in order to motivate replication. A planned location for the contents of this knowledge base is the World Wide Web of the Internet.

2 Analyze and screen the telecommunications applications contained in the knowledge base to determine those with the greatest potential for expanded future mobility enhancement in Southern California. These would become the target applications to expand and enhance.

3 Establish, in cooperation with other telecommunications-user organizations, demonstration research projects as part of generating measurement data on the travel impacts of telecommunications applications.

4 Track and evaluate travel impacts that result from new and accelerated applications projects that are caused by the Strategy. This analysis will determine the net effect on mobility, air quality, energy consumption, and the economy, and becomes the source for new inputs to the Associations ongoing transportation modeling and planning process.

5 Provide findings on trip volume impacts from accelerated deployment of telecommunications applications to the transportation modeling group at the Southern California Association of Governments in order to modify the models that support the formulation of the Regional Transportation Plan, the Regional Transportation Improvement Plan (RTIP), and the Air Quality Management Plan (AQMP). Action taken as a result of these plans can be a causal factor in the accelerated deployment of telecommunications.

Because of the many ways in which today's telecommunications have the potential to generate trips as well as save trips, a strategy that promotes telecommunications deployment generally and broadly in Southern California would likely be counter-productive to mobility enhancement. Exhibit 6 illustrates the concept that only a portion of the set of all telecommunications technology applications will generate travel savings. Conscious and careful design of

Exhibit 6

Sharp Focus Needed for Mobility Benefits from Telecom
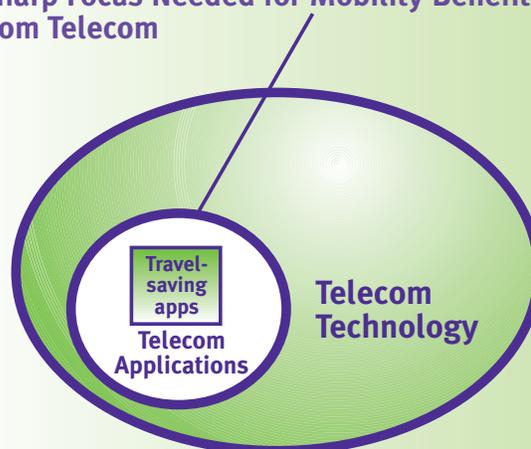
Travel-saving apps
Telecom Applications
Telecom Technology

actions that will expand that portion of applications is crucial to improving mobility. Developing a widely shared understanding and leadership consensus around such a set of actions that will expand that portion of applications is crucial to improving mobility.
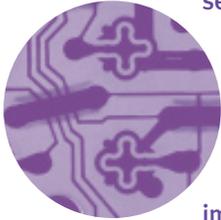
Developing a widely shared understanding and leadership consensus around such a set of actions is also important to the effectiveness of a public-private cooperative approach. The Strategy described here is a managed, facilitated, visible process of business-government interaction to learn what else to do beyond the normal pattern of private sector product marketing and public sector planning regulation and purchasing. While there are many potential actions to take, the best ones need to be determined in the strategy process described here.

Vision for Tomorrow

Here is the Telecommunications Cluster's 2020 vision for making the Southern California region a leader in the use of telecommunications for mobility enhancement:

1. Mobility enhancement is widely perceived as an available additional benefit of telecommunications applications.

2. Users and vendors of telecommunications technology understand how to use telecommunications as a mobility enhancer, and consider this potential as they sell and build applications.

3. Established information dissemination mechanisms exist for easily finding the details of how organizations and people throughout Southern California are using telecommunications to save travel.

4. It is easy to find a wide array of professional technical assistance in designing, building, and operating telecommunications applications that enhance mobility.

5. The rate of growth of operational applications that are saving travel is greater in Southern California than anywhere else in the world.

6. The use of telecommunications by people and organizations for mobility enhancement has reached critical mass penetration.

To achieve this vision, the Partnership's Telecommunications Cluster intends to become the most authoritative, widely-known broker of know-how, skills, information, and other resources for implementing mobility-enhancing telecommunications applications. The Cluster will continuously build linkages to private sector firms which are marketing products and services that implement these applications. There will be continuing liaison and cooperation with other mobility-focused developers of telecommunications applications, for example, the Southern California Telecommuting Partnership, the Playa Vista development, and the San Diego Cities of the Future.
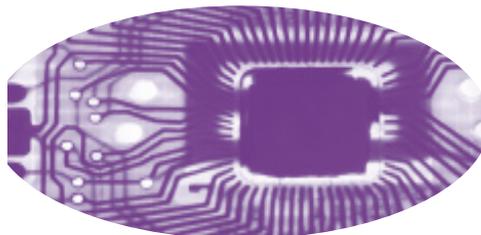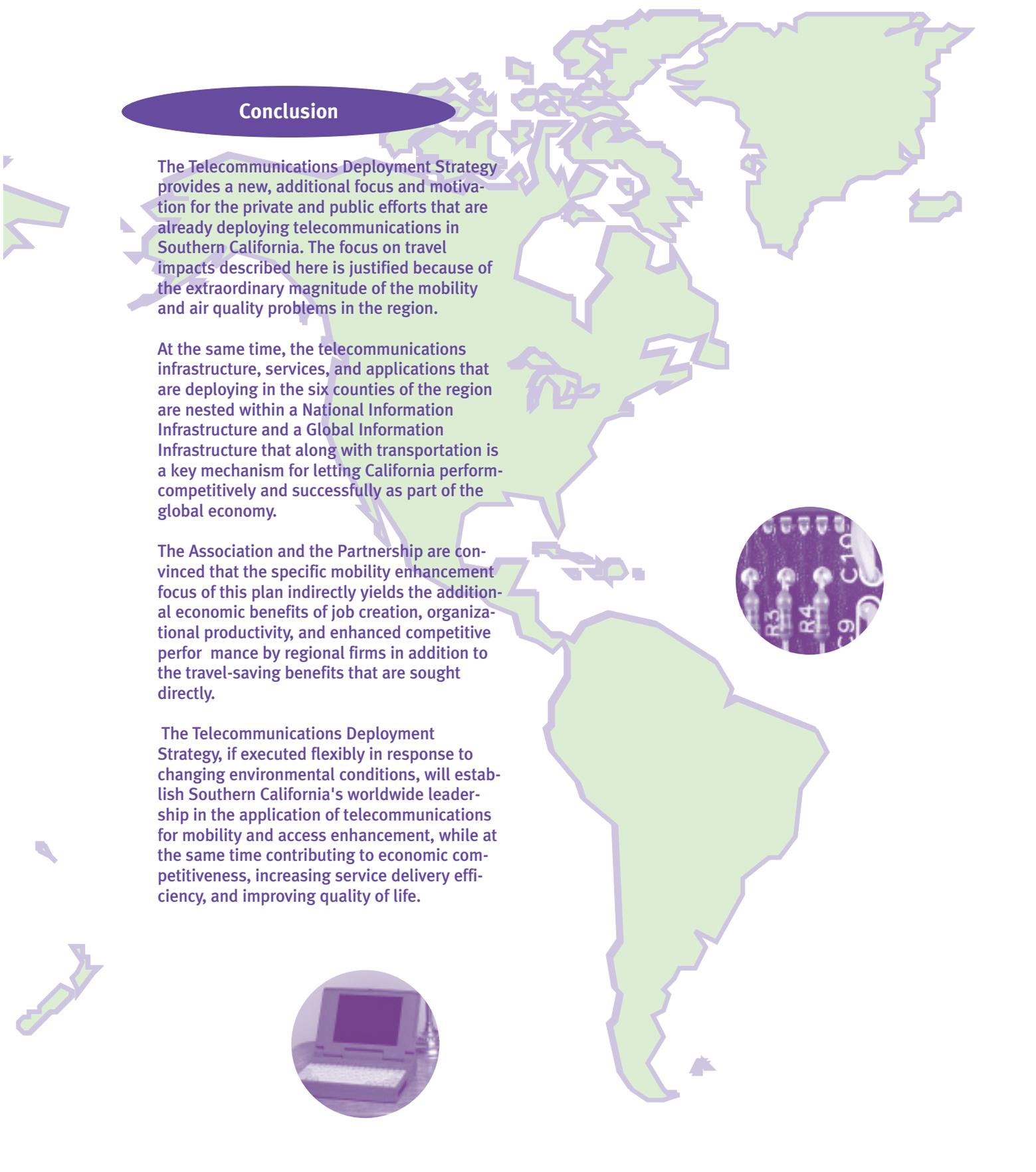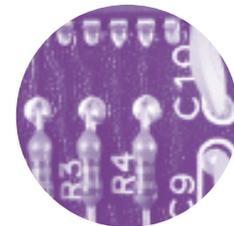
Conclusion

The Telecommunications Deployment Strategy provides a new, additional focus and motivation for the private and public efforts that are already deploying telecommunications in Southern California. The focus on travel impacts described here is justified because of the extraordinary magnitude of the mobility and air quality problems in the region.

At the same time, the telecommunications infrastructure, services, and applications that are deploying in the six counties of the region are nested within a National Information Infrastructure and a Global Information Infrastructure that along with transportation is a key mechanism for letting California perform competitively and successfully as part of the global economy.

The Association and the Partnership are convinced that the specific mobility enhancement focus of this plan indirectly yields the additional economic benefits of job creation, organizational productivity, and enhanced competitive perfor mance by regional firms in addition to the travel-saving benefits that are sought directly.

The Telecommunications Deployment Strategy, if executed flexibly in response to changing environmental conditions, will establish Southern California's worldwide leadership in the application of telecommunications for mobility and access enhancement, while at the same time contributing to economic competitiveness, increasing service delivery efficiency, and improving quality of life.

Acknowledgements

Enclosed is a CD-Rom which contains digital files for the executive summary and main report. These files have been saved as Adobe Acrobat files. You will also find the Adobe Acrobat Reader™ for the Macintosh, Windows and DOS. Open the folder that contains the version corresponding to your computer type and view the "Read Me" file in that folder. The "Read Me" file will give you all the instructions necessary for installing the Acrobat Reader and viewing this document properly on your computer. You must install Acrobat Reader on your computer in order to view these reports properly.

The main report has been broken into chapters. Please open each .pdf file in the respective folder and click on it to view the respective chapter.

Acrobat Reader is a product of Adobe Corporation and is freeware that is available from the Acrobat website @ www.adobe.com. We have enclosed it on this disc for your personal use.

If you need further help on this process please call our web support hotline at (213) 630-1500.

VISION FOR TOMORROW

THE CHALLENGE OF MOBILITY

THE STRATEGY PROCESS

TELECOMMUNICATIONS IN SOUTHERN CALIFORNIA
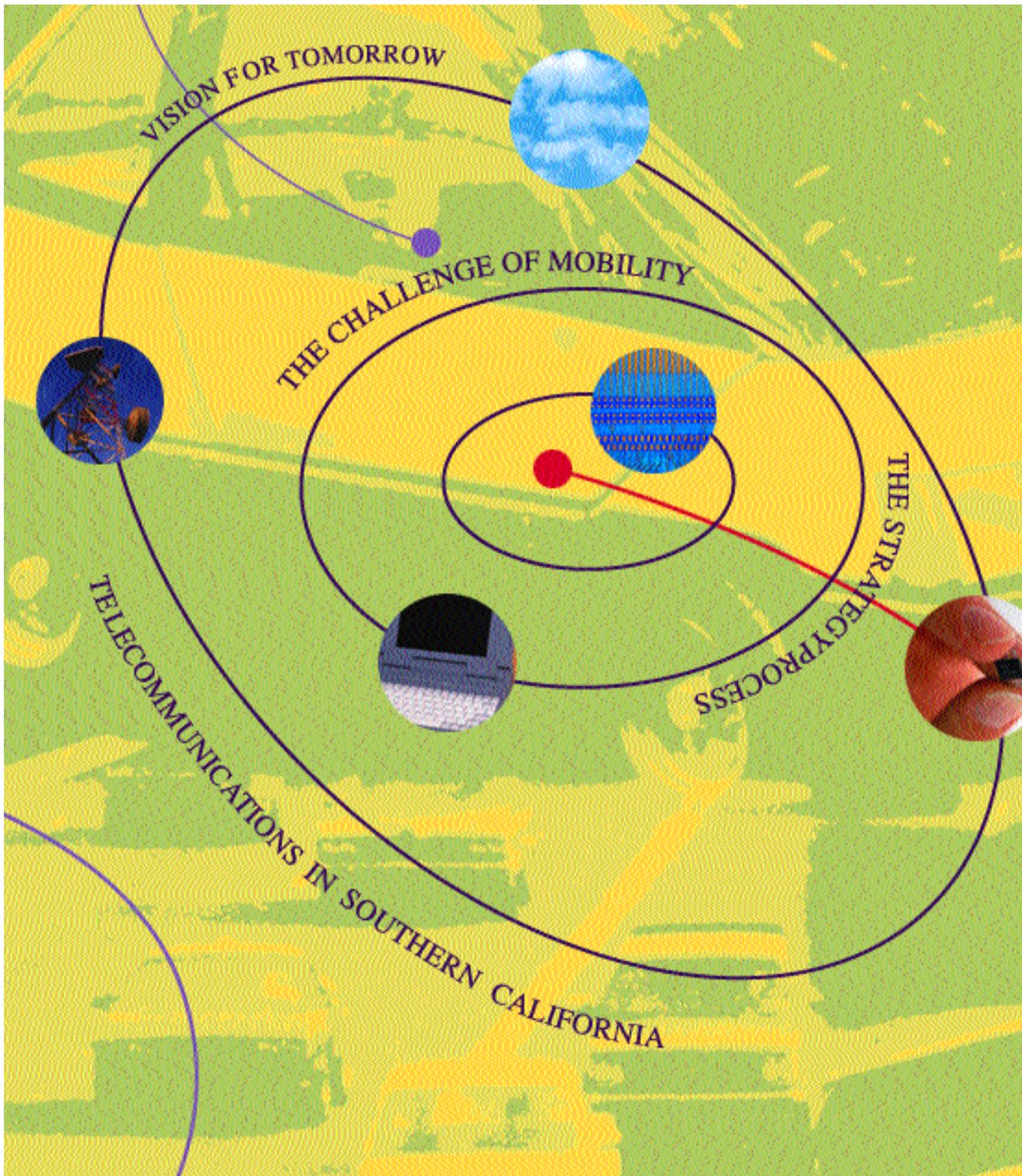
Southern California Economic Partnership
California Department of Transportation

Caltrans

SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

818 West 7th Street, 12th Floor
Los Angeles, CA 90017-3435