ABSTRACT
          This is a report of the ACCESS (Alternative
Comprehensive Community Environmental Study System), a prototype
program in democratic policy making at the regional level. Presented
first is a discussion of the relationship between science,
technology, and regional policy and the use of visual communication
for regional policy making. The second section of the report provides
a summary of the project and the rationale for selection of Santa
Barbara County, California as a region for study. The third section
gives a presentation of the concept of the project, and the fourth
section describes the design phase and the results of studies
conducted in 1974. Activities and research for the future are
described in section five. The appendix lists ACCESS publications, 35
references on visual perception, and the evaluators and consultants
for ACCESS. (CH)

INFORMATION, PERCEPTION AND REGIONAL POLICY

1975

WILLIAM R. EWALD, JR.
Principal Investigator

ACCESS
project
design
phase

2/3

ACCESS has been accorded Official Recognition by the American Revolution Bicentennial Administration for its contribution to the advancement of citizen participation programs., and the promotion of more responsive local governments.

Information gathered through this program can be useful to other communities or regions in the organization and development of similar efforts.

(on February 3, 1976, ARBA endorsed the ACCESS project as an Horizon project in the "Call for Achievement" program.)

The idea underlying the ACCESS project is a simple one. The ACCESS project is a national prototype exploration into new means to assist democratic policy making at the regional. level.

The ACCESS project was undertaken to design a new process to improve regional policy through dialogue informed by research, which makes appropriate use of science and technology, assisted by graphic telecommunications.

The ACCESS project is especially concerned with perception and communication. Communication of facts, ideas and feelings is the cement of all human organization. In a free society the binder in that cement is "truth." For truth to make its contribution freely it must, continuously be discovered, rediscovered, communicated and perceived.

ABOUT THIS REPORT

This report has three purposes:

1) to report to the National Science
   Foundation on the Design Phase of
   the ACCESS project;

2) to discuss information handling
   in relation to democratic regional
   policy making in a time of great
   complexity and change; and

3) to relate the significance of the
   ACCESS project in the South Coast
   Region of Santa Barbara County to
   national needs.

Two charts summarize the development and evolution
of ACCESS as a project and a process: Evolution
of the ACCESS Concept (pp. 30-31) and The ACCESS
Research Design Matrix (pp. 56-57). A summary is
provided at the beginning of each section of the
report. (See also Visual Communication and
Regional Policy Making, p. 9.)

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THE SOUTH COAST REGION OF SANTA BARBARA COUNTY,
CALIFORNIA, site of the ACCESS project, from a
NASA satellite, 565 miles above sea level. Home
for 163,000 people, the region stretches 60 miles
east to west along the coast, 90 miles northwest
of Los Angeles.
(Composite courtesy Department of Geology
University of California, Santa Barbara)

ACKNOWLEDGEMENTS

It is important to acknowledge the extent of this involvement at the outset of this report. A fundamental characteristic of the ACCESS process that the project designed is the collaboration of groups--at national, state and local levels--more diverse than are used to working together.

American Society of Landscape Architects,
    Southern California Chapter
Bank of America
Building Industry Association
George B. Cavaletto
Pearl Chase
Citizens Planning Association
Mr. and Mrs. James Forsythe
Friends of Santa Barbara County
Edwin J. Heimlich
Isla Vista Community Council
Anna Laura Myer
Leinie Nagel
Real Estate Board of Santa Barbara
Santa Barbara Beautiful
Charles K. Schmandt, Architect
Alice Sedgwick
Southern California Edison Company
Katherine W. Tremaine
Warner & Gray, Inc., Architects

1974 ENDORSERS (Supporters)

American Institute of Architects, Santa Barbara
The Ansul Company
Anthropological Research Company
General Electric, TEMPO
Goleta Valley Citizens Planning Association
Mr. and Mrs. George Huber
League of Women Voters of Santa Barbara
Los Padres National Forest
Sierra Club, Santa Barbara Group
Universal Heritage Investment Corporation
University of California, Santa Barbara

Local cooperation with the ACCESS project was led
by the "patron saint" of Santa Barbara, Pearl
Chase. To enhance the region, Dr. Chase for over
fifty years has been joining with other Santa
Barbarans in numberless ad hoc committees and civic
associations--including the ACCESS project. More
than any other single living person, she is respon-
sible for the quality of the environment in the
Santa Barbara region. Her counsel to the Principal
Investigator, and her staunch support, gave the

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ACCESS concept an opportunity to engage the community
of the South Coast Region and to evolve.

At this writing over 80 civic leaders in the
region count themselves members of ACCESS and
freely contribute time to further its evolution.
This interest and activity of the ACCESS
Advisory Board, Executive Committee and membership
have been the basis for the results of the Design
Phase and for sustaining local cooperation.

In addition to Dr. Chase, I am especially grate-
ful to Max L. Feldman and the individual contribu-
tions of Abdulhamid Akoni, Research Anthro-
pologist; Charles Bensinger, Communications Con-
sultant; Roland F. Bryan, UCSB; Peter C. Chapman,
UCSB; Edward N. Dodson, General Research Corpora-
tion; Firmin F. Feuerborn, Building & Construction
Trades Council; Damian Garcia, Casa de la Raza;
Kevin H. George, City of Santa Barbara; George
E. Goodall, County Farm Advisor; Norman F.
Gutshall, Southern California Edison; and Marie
Harvey, Secretary to Pearl Chase.

Others were Sue Higman, Citizens Planning Associa-
tion; Hallock Hoffman, Fielding Institute; Mary
Louise Kasson, League of Women Voters; Arthur T.
Kvaas, Moseley Associates, Inc.; Carol Lawton,
Santa Barbara City College; James D. Milliken,
California Association of Realtors; Larry Padway,
Isla Vista; Clifford Lee Pauley, Santa Barbara
County Planning Department; Clifford Petrie,
Area Planning Council; Don Renton, Los Padres
National Forest; Joseph J. Sayovitz, UCSB; Jack
H. Stoltz, Santa Barbara County Schools; Michael
B. Towbes, Builder; William K. Wittausch, Citizens.
Planning Association; and Mary K. Wright, League
of Women Voters.

Personal involvement and "earnest money" in
support of the ACCESS project Design Phase was
essential. But basic funding and recognition of
the national implications of the ACCESS concept
had to come from outside the region, from the
National Science Foundation.1/ Dr. Robert W.
Lamson, NSF project monitor for the ACCESS
project, has made important contributions as both
advocate and critic.

All funds for the ACCESS project were managed by
The American Society of Landscape Architects
Foundation, McLean, Virginia. The efforts of
Gary O. Robinette and Margaret Tylek on behalf
of the foundation have been most appreciated.
ASLAF provided both a means to assemble funds
for the ACCESS project, removed from local special
interest pressures, and a means for the distribu-
tion of project reports to a nationwide audience
of professionals.

Special mention must be made of Daniel Wormhoudt's
work on the project since August 1974; of the
critiques, writing and editing of Charlton R. Price
and William R. Legg, and of the consultants to the
ACCESS project listed in the Appendix. Also, Albert
D. Biderman and William H. Huggins provided expert
reading of the visual perception section of this
report, for which my daughter Annalisa did exten-
sive library research.

I am grateful to Arlene Nowell who managed the
complex books of the project throughout the Design
Phase and to the small, ever-changing staff,
beginning with landscape architect Arthur C.
Sylvester, which performed essential work over
the year, concluding with the part-time, willing
industry of Victoria Frost.

Without the help of others, but especially without
my wife, Katya, there would be no report.

WRE
July 6, 1975

1/ The National Science Foundation, now funded by
Congress at the $700 mil. on level, has grown
since it was founded in 1950 to be one of the
primary research instruments of this nation.
For more than two decades it has funded basic
research and education in the sciences. In
recent years NSF has been directed by Congress
to search for effective new ways to apply
science and technology to help resolve
national, state and local problems.

"Many new things in this fast-moving age make it difficult to keep pace with an ever-changing world. Let us communicate, cooperate and coordinate our efforts for good freely."

Pearl Chase

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FOREWORD

As a people we are becoming newly aware. We
are aware of energy, technology, environment,
employment and the economy, pollution, nature,
resources, population--and CHANGE. We are
becoming aware of these factors in terms of
the world, nations, cities and village settle-
ments--in increments of time that reach to
the year 2000 and beyond. We are also becom-
ing aware that all this change may be experi-
enced differently through the different
logics of different cultures. At the same
moment we are becoming aware of the inter-
relatedness of every thing and every person.

The concept of the ACCESS project is to design
a process to help comprehend the complexity of
this reality--in this time of enormous change--
in ways which can help us make better policy
concerning the quality of life within regions.
This seems to require us to create new means to
facilitate peoples' access to information, exper-
tise and to each other.

Participants in the ACCESS regional policy dialogue,
informed by research, aided by interactive graphic
telecommunications, and making appropriate use of
science and technology, would invest themselves
with new comprehension and new effectiveness. The
process intended would facilitate the dispersal of
knowledge to regions, and the greater use of
science and technology to further human purposes
in harmony with nature over the long term.

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EPOCH - A New Beginning

"...epochs sometimes occur in the life of a
nation when the old customs of a people are
changed, public morality is destroyed, reli-
gious belief shaken, and the spell of tradi-
tion broken, while the diffusion of knowledge
is yet imperfect and the civil rights of the
community are ill secured or confined within
narrow limits. The country then assumes a
dim and dubious shape in the eyes of the
citizens; they no longer behold it in the
soil which they inhabit, for that soil is to
them an inanimate clod; nor in the usages of
their forefathers, which they have learned to
regard as a debasing yoke; nor in religion,
for of that they doubt; nor in the laws, which
do not originate in their own authority; nor
in the legislator....

"In this predicament, to retreat is impossible,
for a people cannot recover the sentiments of
their youth any more than a man can return to
the innocent tastes of childhood; such things
may be regretted, but they cannot be renewed.
They must go forward...." - Alexis de Tocque-
ville (1805-1857)2/

Statements of the French writer de Tocqueville
still live. Acknowledged as one of the most
astute observers of America in history, if Pearl
Chase is the "patron saint" of Santa Barbara,
Alexis de Tocqueville is the "patron saint" of
the ACCESS project. He recognized both epoch and
"voluntary association," that particular American
genius for coping.

The nature of our time is accelerating change,
growing uncertainty--a threatened and threaten-
ing environment--call it an Epoch - A New Beginning.
This change, as it has accelerated since World

2/Alexis de Tocqueville, in J.P. Mayer and Max
   Lerner's Democracy and America, Harper & Row
   1966.

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War II, is now so rapid, of such a scale, and so
pervasive, it can only be appropriately compared
with the industrial revolution of the 1800's and
the agricultural revolution of 8000-6000 B.C.
Population growth (and concentration) and tech-
nology are changing our understanding of time,
distance, resources, environment, and above all,
expectations. Each is interacting with the
other and with people in new ways.

We can identify our time by de Tocqueville's
definition above, and in contemporary terms, as
a Technological Epoch. In the past, a signifi-
cant invention was one that brought an increase
in efficiency of 2-5 times. Since World War II,
the effectiveness of computers in all ways, in-
cluding speed, is said to have increased one
million times and is expected to increase another
100,000 times in the next ten years and then
continue to improve.

Atomic energy, in World War II, had a potency one
million times greater than ordinary explosives. It alter-
nately threatens and promises us the future. In
the past century, the facility, volume and speed
of communication are said to have improved by a
factor of ten million, much of it since World
War II. World population has grown 1,000 times
since 1700 and while national populations double,
their cities quadruple. "Business as usual" has
grown more hectic by the day. Existing means
for society to reach sound policy decisions
falter more often.

We may have reached a transition period in the
"Ascent of Man" that is the equivalent of his
rise from the ape. But the mood of many today is
pessimistic, tense, apathetic--generally one of
dismay. Understanding, and the goodwill that
makes understanding possible, has become more
difficult. Many "practical" men of our day con-
tinue to plan their operations as if they can be much
the same as in the past. They do not seem to sense
that part of the solution to the urgent needs of
today is innovation and anticipation of the
next five, ten, fifty, one hundred years....
Government and private enterprise, both focused
on the short term, seem either to underestimate

the circumstances or overestimate their capacities. And most of the people look to one or the other for solutions.3/

UPDATING DE TOCQUEVILLE

John D. Rockefeller III calls for The Second American Revolution, a Bicentennial Era from 1976-1989.4/ As we mark America's Bicentennial it can be said that the "Tyranny of the Environment" of a Technological Epoch is today's ruling tyrant, as overbearing as King George's "Tyranny of the Crown" in 1776.5/

And perhaps the capacity we need to cope with this tyranny is at the core of one of our greatest traditions, as de Tocqueville saw in 1832. Perhaps the "voluntary association," in twentieth century form, is the application of American genius that is now most needed to help deepen our capacity to master the "Technological Epoch."

3/Ewald, William R., Jr., "Managing the Environment Now, For the World Ahead," for the Edison Electric Institute national conference, January 27-29, 1972, at Santa Barbara on the concept of the "ACCESS process" and the possibility of the Santa Barbara Region for a pilot test.

4/Rockefeller, John D. III, The Second American Revolution, Some Personal Observations, Harper & Row, 1973.

5/Technological "Tyranny of the Environment" was examined by commissioned authors and "Committees of Correspondence" marking The American Institute of Planners 50th year. It was the Principle Investigator's basis for organizing AIP's widely sponsored, four year $1.25 million national consultation THE NEXT FIFTY YEARS-- The Future Environment of a Democracy. Consultation books: Environment for Man, Environment and Change, and Environment and Policy were published by Indiana University Press, 1967, 1968. A 28 program videocassette series from the consultation, also entitled THE NEXT FIFTY YEARS, was completed in 1973.

Associations are sometimes referred to as a "third
force" in American society. One contemporary
writer had this to say:

> "This force represents neither business nor govern-
> ment, both of them established bureaucracies of
> professional specialists. Nor does it represent
> the academic establishment, which is the training
> ground for the professional specialists employed
> by business and government.
>
> The Third Force is a manifestation of a strong
> American habit, described vividly by de Toque-
> ville more than a century ago. He observed
> that Americans, when confronted by a new need,
> did not wait for a Royal Commission or an
> executive decree, The American method was to
> form an _ad hoc_ association of citizens to bring
> the need to the attention of all who might be
> concerned. Americans wanted to get things
> done, and this was the quickest way to do it.
> It was at that time America's answer to the
> charge that democracy is inefficient. It still
> is America's answer.
>
> An association of the kind that de Tocqueville
> described is indispensable if we want to
> make...changes called for...in time. Other-
> wise we shall allow ourselves to be backed
> into the future, fighting rearguard actions,
> crisis after crisis....For the reactions of
> bureaucracies are sluggish, and it takes
> more than one crisis to get any reaction from
> them at all..."6/

The ACCESS project, in the South Coast Region of
Santa Barbara County, California, is designing
a process for considering regional issues, options
and impacts which is to be managed by a responsible
"update" of de Tocqueville's "association."

6/From the preface by Richardson Wood, former
   managing editor of _Fortune_, in _The Next Fifty
   Years Syllabus_, by William R. Ewald, Jr.,
   commissioned by the Academy for Contemporary
   Problems, unpublished.

The ACCESS project plans to examine a specific
region's issues, values, options and impacts,
and thereby to seek new means to use science and
technology to achieve a human environment more
compatible with nature. The ACCESS process to be
tested will strive to be more rational, more
pervasive, and at the same time more "self-
instructive" (and of more use to the decision-
maker) than the pressuring and public hearings
called "citizen participation" today.

The ACCESS process proposes to offer means to
help balance the common sense of citizens with
the experience and skill of experts and decision-
makers. The goal of the ACCESS process is to
increase the capability of democratic decision
making, leading to timely implementation in
the fast changing complexity of the Tech-
nological Epoch.

William R. Ewald, Jr.
Santa Barbara
July 1975

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I. Thesis

I. THESIS

The ACCESS project recognizes science and tech-
nology as driving forces for CHANGE. It also
recognizes that they provide extraordinary tools
to help manage CHANGE. These are large issues.
Science and technology and human values are them-
selves changing, and democratic control of science
and technology to advance the human purpose is yet
to be perfected. Important as these issues are,
how can we learn how to think and communicate
more usefully about them?

This section of the report discusses how the
examination of specific regional policy issues
and options by the ACCESS project provides a
practical basis to explore new ways to inject
science and technology into environmental policy
making. Incorporated into this study is an explora-
tion of the contribution of visual communication,
especially interactive graphic telecommunications,
to perception and thought.

1

SCIENCE, TECHNOLOGY AND REGIONAL POLICY

> The world today is made and powered by science,
> and for any man to advocate ignoring science
> is to walk with his eyes open into slavery.
>
> — Jacob Bronowski

> Science must be humanized....It must be an
> integral part of our culture and must remain
> a part of it subservient to the rest.
>
> — George Sarton

Most discussion about better use of science and
technology has been about <u>national</u> science policy
or technological assessment in <u>general</u>. It is
natural that such discussions take place at high
levels. The subject is exceedingly abstract; it
demands much specific knowledge and seems to
attract articulate persons with a keenly developed
concern for the "human condition." Certainly it
is important that discussion with a "global per-
spective" continue.

A major tenet of the ACCESS project, however, is
that such discussion on this level alone is insufficient.

2

By remaining at the level of global or national
policy abstraction, science and technology are
incomprehensible to all but an elite. In a democ-
racy this makes it difficult for Congress, the
President, and the "scientific community" to formu-
late and implement fundamental improvements regard-
ing the application of science and technology.
Until more of their constituents have had first
hand, credible experience with such policy making
"back home" it is politically impractical.

Support for this assertion can be found in the
energy situation. "As is now being revealed,
for decades all the urgings of science advisers
in the White House, all the scientific advisory
bodies and individual scientific, technological,
and business experts testifying before Congress
and writing in the papers in past years were
unable to head off the current situation"...."the
pace of change and the problems it has created
have far outstripped our ability to bring science--
long-range, comprehensive scientific thinking--
to the point of acceptance and action by the
political system." 7 /

Although it is part of our culture, science (and
technology) has not been integrated with other
elements of our society. Some people, probably
many, are fearful that it will be, Orwell-style;
others can accept the Bronowski and Sarton state-
ments above. The latter recognize in science both
a great threat and a great good which must be
brought into the conscious working of society if
the human purpose is to be furthered.

The ACCESS project, in its explorations to improve
policy making, seeks ways to make greater use of
scientific knowledge and scientific methods to
help policy-makers at the regional level.

---

7 /Stever, H. Guyford, Director of the National
   Science Foundation at the meeting of The Amer-
   ican Association for the Advancement of Science,
   San Francisco, February 29, 1974; Public
   Sciences Newsletter, MIT Press, May, 1974.

3

Dialogue at the regional level can be clarified
by the understandable realities of a place people
relate to. Such dialogue becomes more useful when
there is an awareness of the natural barriers be-
tween scientists and politicians, and when it
is carried on in a manner responsive to the public,
inviting involvement and understanding.

By the nature of their professions, scientists
are specialists, whereas politicians are gener-
alists. Scientists often act as cooperating
members of committees whereas politicians act as
adversary lawyers. It is especially important to
keep in mind for this project, that scientists
tend to be visual thinkers, versus politicians as
verbal thinkers.

> "The scientist's role in society is to gain
> knowledge and understanding; the politician's
> is to decide and to act. Indeed, in our
> democracy he alone has the obligation, as the
> people's elected representative, to make
> decisions as to what society shall do and to
> take responsibility for those decisions. In
> his search for truth, the scientist is
> oriented toward the future; the politician's
> orientation is usually here and now." 8 /

There must be much wider understanding of the
potentialities and limitations of human action,
science and technology. The ACCESS project, by
examining specific regional environmental issues,
seeks ways to involve the scientist, the politician,
and the public in policy making.

> "Science...sweeps away superstitions that
> paralyze political responsibility. It opens
> up new opportunities and new possibilities

8/Revelle, Roger, "The Scientist and the Politi-
cian," Science, Vol. 187, March 21, 1975;
pp. 1100-1105.

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- 4
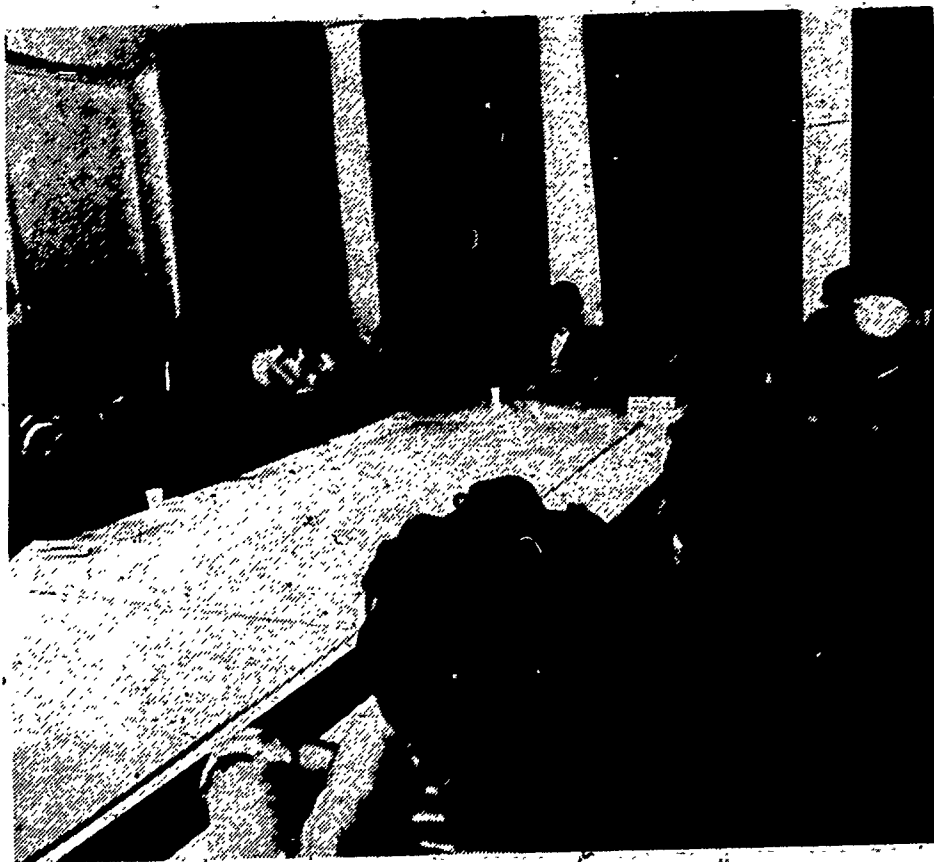
GEO-CODING WORKSHOP June 1, 1974 Students, professionals
and citizens meet at the ACCESS Lugo Adobe. Morning
Alhecama Theatre presentations are carried into an after-
noon dialogue. (photograph by Leinie Nagel)

5

for cooperation, and thus makes the concept
of public interest more meaningful, though
at the same time more complicated and diffi-
cult to define...that is why the scientific
community and the politicians need to develop
the clearest possible idea of the working
rules that govern their relationship. But
it is not easy to define the ways in which
scientists should be given support by govern-
ment and permitted to exercise their initia-
tive or influence on policy issues of interest
to government." 9/

The most recent full-time science advisor in the
White House to a President, Dr. Edward E. David,
Jr., in a letter encouraging the ACCESS project's
explorations wrote:

"...today it is increasingly clear that the
anatomy of the world situation requires not
only the unity of engineering and science,
but also the extension of this unity to
include other elements, namely, economics,
social factors, legal considerations, and
political issues. It is this coalition that
is required for coping with the challenges
of the 1970's and 1980's, just as the unity
of science and technology was the theme of
the 1950's and 1960's....The new unity I
speak of...cannot become a reality without
the kind of exploratory effort you are mak-
ing. We understand far too little about
public participation in decision-making,
and I hope and expect to see new techniques
toward this end."

_____

9/Price, Don K. The Scientific Estate; Cam-
bridge, Belknap Press of Harvard University
Press, 1965, p. 274-275.

6

Technology Assessment and Technology Transfer

The ACCESS regional policy process could become
an instrument for regional (and scientific)
self-education for all those who take part in
it--from official lawmakers to concerned lay
citizens. It proposes, in a sense, a new form
of continuing education (possibly available for
students in school also). As such, it has the
potential to provide a regional capacity for
technology transfer, technology assessment,
futures research and research utilization.

The ACCESS regional policy process serves a
"midwife" function between information (includ-
ing technology) and potential users. Through
the ACCESS process a region can learn what it
needs to learn; it can establish practical tests
to refine knowledge to its own purposes.

This can be important. By now, for instance,
federal agencies such as NASA and NSF have had
a significant learning experience in their
attempts to transfer technology and research to
local levels. There seem to be certain limita-
tions to the contribution that can be made to
that transfer by either universities or local
governments.

Advanced technology may already be well under-
stood in universities, where much of it has
evolved, but the universities' natural facility
for "transfer" is, as part of the educational
process, to its students. Transfer of technology
by universities directly into the operating
circumstances of local government and other
local organizations has not been so well proven
that it can be accepted as the obvious means.

Similarly, local governments, with operating
bureaucracies which do have the capacity to use
technology, are not, typically, familiar with
rapidly changing technology. Besides, government
departments are harried by their single function
focus and the daily emergencies of their own
operations with fixed budgets for dealing with
them. Thus inhibited, technology transfer by

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government is further dampened by elected
officials who can seldom afford to take the risk
of failure which lurks in innovation. They have
both the real threats of technology to keep in
mind and the easy political advantage that can
be taken by political opponents eager to point
out any failures.

To date, most federally sponsored innovative
research with urban information systems and tech-
nology transfer has been performed in universi-
ties or local governments. Progress has been
made, but it is limited and not widely disseminated.
This experience has been a basic factor in federal
agency interest in the ACCESS project.

The ACCESS project offers a place for testing
technology transfer through a non-profit broadly
based regional organization. Without being
caught up in the primary operations of either
government or higher education, the ACCESS project
relates to them both. The politician or the
university administrator, thereby, is not called
upon to take the responsibility of a gamble with
innovation. He can explore innovative ideas
through the ACCESS community-based process where
they can be tested and adapted before being
officially adopted.

VISUAL COMMUNICATION FOR REGIONAL POLICY MAKING

A major emphasis of the ACCESS process is the
visual display of information to address and com-
municate about regional policy issues, and to
enhance regional policy dialogue, learning and in-
formation exchange. A wide range of graphic tech-
niques--maps, models charts, photographs, film
animation--would be used. Interactive computer-
assisted graphics would be emphasized.

Visual perception and communication will be dis-
cussed at some length here. Perception and communi-
cation are central to the ACCESS design for develop-
ing a new competence to deal with the complexities
of regional policy making (including related self-
education, technological assessment, technology
transfer, futures research, and research utiliza-
tion).

The design for the ACCESS process recognizes,
further, that a wide spectrum of interests and
persons of different degrees of sophistication
take part in regional policy formulation. This
makes visual communication even more vital.

9

Words Versus Graphics

The investigator has found that visual communication seems to cut across the technical jargon of different specialties, minimizes semantic confusions, facilitates an expanded perception of a task which incorporates more points of view and reduces to insignificance lack of prior personal acquaintance of inter-disciplinary team members. For one policy study he established procedures which restricted each study team member to verbal or graphic (no written) exchanges. The work together was intensive and combined the products of many others not present. It was completed in a span of a few months although team members did not find it profitable to extend sessions beyond 2 1/2 consecutive days at a time.10/

It is not intended that the ACCESS process emphasis on visual communication exclude verbal language. (Actually, most persons have an ease in generating words which they do not possess in pictures, and this is likely to persist.) It is simply that in the ACCESS process it is recognized that reliance on words alone is a limitation that need not be accepted. For the important purpose of regional policy making in a fast-moving time, all means of cognitive and affective communication should be used.

> "...The function of language is essentially conservative and stabilizing, and therefore it also tends negatively to make cognition static and immobile."11/..."The word symbol which carries with it a fixed connotation tends to crystallize into static notions many of the concepts which can only be understood

---

10/Undertaken for Governor Nelson A. Rockefeller, the graphic report resulting was published by New York State in 1964 as CHANGE/CHALLENGE/ RESPONSE - a 60-Year Development Policy for New York State.

11/Arnheim, Rudolf, Visual Perception and Thinking, p. 100. See APPENDIX for a bibliography of visual perception references.

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in dynamic motion."12/."...The advantage of
graphical output is that graphics represent
a two-dimensional language as opposed to the
one-dimensional language of verbal or printed
media. The scanning and absorption process
for two-dimensional information is much faster
and more efficient than the one-dimensional
information."13/

- One-dimensional as referred to here means only
one sort of perception is possible through ver-
balization, whereas visual perception offers
content and relationships simultaneously. In
combination the visual image and the spoken word
offer the potential for complementary reinforce-
ment.
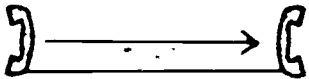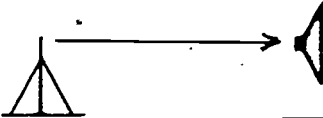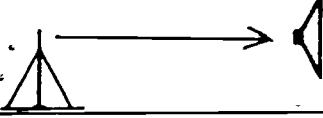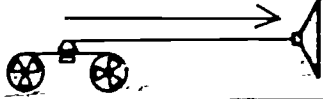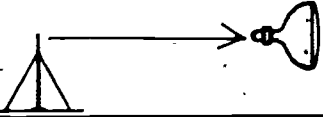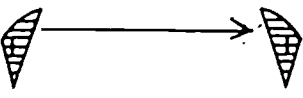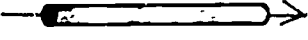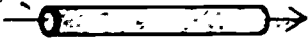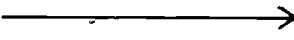
Words alone make things less than their total, by
analytically subcategorizing them. For instance,
if you say an apple is red, you have made a
"false" statement, in the sense that it is so
incomplete. An apple is also round and three-
dimensional, etc., etc., but you didn't say that.
You can't present specific qualities verbally,
except one at a time. That one-at-a-time sort
of sequence is much further removed from the
gestalt of reality than a visual image. What we
see sequentially are whole perspectives, not indi-
vidual qualities. For many important sorts of
thinking (such as regional policy making) we need
a dynamic, more nearly "total" means of communica-
tion than words by themselves allow.

New Graphic Technology

In computer generated images, "A dynamic dimen-
sion is now available that requires the inven-
tion and development of new conventions and a
visual syntax appropriate to this new medium if

12/Cassirer, Henry R., "Learning to See", p. 504,
   255.

13/Abrams, Marshall D. "Graphic Communication of
   Data from the Digital Computer", p. 280.

11

CHANNEL		CHANNEL BANDWIDTH (HERTZ)	CHANNEL CAPACITY (BITS PER SECOND)
TELEPHONE WIRE (SPEECH)		3,000	60,000
AM RADIO		10,000	80,000
FM RADIO		200,000	250,000
HIGH-FIDELITY PHONOGRAPH OR TAPE		15,000	250,000
COMMERCIAL TELEVISION		6 MILLION	90 MILLION
MICROWAVE RELAY SYSTEM (1,200 TELEPHONE CHANNELS)		20 MILLION	72 MILLION
L-5 COAXIAL-CABLE SYSTEM (10,800 TELEPHONE CHANNELS)		57 MILLION	648 MILLION
PROPOSED MILLIMETER-WAVEGUIDE SYSTEM (250,000 TELEPHONE CHANNELS)		70 BILLION	15 BILLION
HYPOTHETICAL LASER SYSTEM		10 TRILLION	100 BILLION

CAPACITY OF VARIOUS COMMUNICATION CHANNELS (Adapted from "Communications" by John R. Pierre, ©copyright 1972 by Scientific American, Inc., all rights reserved.)

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it is to be fully used for communication and
education."14/

Computer generated images provide a means for
decision-makers and lay citizens to enter into
regional policy dialogue with access to a vast
amount of understandable information. Images can
even be made responsive to query regionwide, via
a return signal on co-axial cable. The technology
exists but this use is unproven and most people
are not themselves adept at generating images. For
that reason, Huggins, while recognizing the
capacity of computers to generate images, says
"a word is worth a thousand pictures." Graphic
literacy is at the core of the ACCESS exploration.

The accompanying chart shows how the capacity for
communicating "bits" of information is growing.
(Bit is a contraction for "binary digit", "0" or
"1". This is the computer's way of stating choice,
"black" or "white", "yes" or "no," which is how it
"moves" information.) Measuring English text
at one bit per character, experiments indicate that
the information rate of speech is probably much
less than 100 bits per second. Contrast that with
the 60,000 bit per second capacity of telephone
wire, the 90 million bits per second of commer-
cial broadcast television and what is projected!

Still, if a picture costs at least as much as 1000
spoken words to transmit, those 1000 words are
also more expensive to transmit than 1000 words in
written text. We need to know in what ways the
picture is worth the extra expense. Is the combined
affective and cognitive learning that results from
its use really worth it?

Traditional learning is primarily cognitive,
verbal, and occurs in school. Affective visual
learning is only beginning to be employed, most
of it outside the school room.   Education

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14/Huggins, W. H. and Entwhisle, D. B., "Computer
    Automation for the Academic Community", p. 623.

has been both limited in availability and directed
to only "half" of our capabilities. Graphic
telecommunications, on the other hand, may help
establish an entirely new, and widespread, learn-
ing experience that contributes to a much better balance
of affective with cognitive education. What will
it mean if we learn to use our "total" minds?

Even though it can now be seen that enormous and
widespread graphic capabilities could be made
available we still seem to underrate the signifi-
cance of visual communications. Scant research
is going into its potential applications.

Visual Perception - Visual Thinking

Experimental psychologists have traditionally
held that perception is separate from thought.15/16/
This may be one of the most vital of misunder-
standings--missing the gestalt of reality--
denying the power of affective as well as
cognitive means of analysis/synthesis/communica-
tion.

Two of the most respected scholars concerning
visual perception who challenge the notion that
perception is separate from thought are Rudolf
Arnheim and J. J. Gibson. Quoting from Arnheim:

> "My contention is that the cognitive operations
> called thinking are not the privilege of mental
> process above and beyond perception but the
> essential ingredients of perception itself."17/

_____

15/Arnheim, Rudolf, Visual Thinking, p. 2.

16/Neisser, Ulrick, Cognitive Psychology

17/Arnheim, Rudolf, Visual Perception and Think-
    ing, p. 100.

14

Gibson says essentially the same and goes further, stressing the uninhibited nature of visual infor- mation:

> "Not only do we perceive in terms of visual information, we can also think in those terms. Making and looking at pictures can help us to fix those terms...visual thinking is freer and less stereotyped than verbal thinking; there is no vocabulary of "picturing" as there is of "saying".18/

Scientists and engineers as well as artists, architects and designers tend to think in graphic terms. But developing this visual capability to think is not part of our educational curriculum. Our concept of intelligence is largely based on verbal aptitudes. Verbal performance so dominates education one wonders if we don't indeed "harbor a crippled concept of human potentiality."19/

One assumption of the ACCESS process design is that our inadequately developed ability to think as well as our inability to communicate regarding complex issues, such as regional policymaking, makes us pessimistic about mastering change. If the two capacities go together--as in perception and thought--a process which recognizes this inter- dependency may help free the human mind, and society at large, for the multi-variable policy research ahead. The technological means for combining communications and graphics for this purpose is at hand.

> "...Computer graphics will become a part of thinking and problem solving and decision mak- ing wherever those functions are carried out. Design will, of course, be a major application

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18/Gibson, J. J. "The Information Available in Pictures", p. 93.

19/Eisner, "Media Expression and the Arts", p. 103.

area: design of all kinds of systems and
processes--space, urban, transportation,
manufacturing, military--as well as devices
and structures. Applications will abound in
research and development and in medicine. But
the application area par excellence will be
education."[20]

The ACCESS Project -Exploratory Research in Visual Perception

"The information provided by a picture is
information for perceiving in the widest
sense of the term, not only for remembering
something in the past but also for conceiving
something in the future - in short, for
apprehending."[21]

Visual perception may help lead us to the freer
way of thinking a Technological Epoch would seem
to call for. Today we can be solemn when we
talk about long range planning, without being
serious about applying it, because the future is
such a complex abstraction. The way we communi-
cate about the future does not compete with the
current crisis for serious attention.

Perhaps through color, pattern, motion, sound and
the ability to interact with visual images we can
readily structure abstract conceptual percep-
tion (and thinking) about the future. Perhaps
images of the future can be generated which can
command immediate attention in policy dialogue
when combined with the power and realism of voice
and other sounds. Such images would be assured
of the greatest possible constructive use if they
were also subject to instant challenge and query.

The ACCESS project proposes to investigate this
possibility, first in its one-year Pilot Test and
then as a 3-5 year region-wide System Research

20/Licklider, J.C.R., "A Picture is Worth a Thou-
sand Words - and It Costs...", p. 620.

21/Gibson, p. 90.

Demonstration. Free of the constraints of tra-
ditional institutions, the ACCESS project offers
a basis to study and test the potential of
visual communication as it relates to the complex
thought involved in regional policy making.

When we speak of policy dialogue we mean two or
more persons conversing or reasoning together.
Dialogue can be written. The term as commonly
used, however, relies on the spoken word made
more meaningful by the participants' perceptions
of each other, face to face. The ACCESS process
expands this means of conversing and reasoning
together to provide explicitly for visual communi-
cation (of all kinds but especially interactive
graphic telecommunications).

In so doing, there is no intention in ACCESS policy
dialogue "to underrate the importance of the con-
scious formulation of verbal concepts, the tradi-
tional form of expression for great thinking.
The aim is rather to enlarge the foundation of
this expression, to guard against intellectualism
devoid of emotional meaning to modern man"22/...
and to help cut through, quickly, great complexity
to reveal interrelationships and processes.

The ACCESS concept of "visualized" policy dialogue
would be at its richest for regional policy mak-
ing purposes, occurring in a special place for
10-25 persons. We call it a Regional Situation
Room. It would be especially equipped for infor-
mation retrieval and visual display. For maximum
flexibility, and for the capacity to handle large
volumes of information with comprehension, the
ACCESS project proposes to explore the effective-
ness of "responsive" graphic telecommunication.
Information in this form could be generated from
computers, projected on the wall of a Regional
Situation Room, interconnected to other meeting
places (or terminals) and carried throughout the
region by cable television--with an ability to ini-
tiate or respond to the graphic display built-in.

22/Finn, J.D., "A Look at the Future of A-V
   Education", p. 247.

17

Of course a significant part of the dialogue in
a Regional Situation Room would be the signals
that are read in face-to-face interpersonal
communication. It is assumed that the visual
media selected would be appropriately matched
to the content of the issue under discussion.
Recognizing the power of affective communication,
it is also vital that appropriate measures be
taken to guard against poor information, mis-
representations and emotional manipulation. The
means by which this is accomplished is, in fact,
being explored by the ACCESS process design.

Policy dialogue, in the ACCESS design, combines
affective perception, and an awareness of the
personal interrelationships involved, with the
need for quick access to volumes of information.
This seems to demand the sort of storage, access,
processing, display (graphic telecommunications)
that is possible only with the assistance of
computers.

It has been said that at the present rate of
increase, figuring two hours per book, it would
take one person reading 24 hours a day, approx-
imately two years to read the 15,000 volumes re-
ceived in sciences and technology by the Library
of Congress during a 3-month period.[23/]

We need this incredible, specialized, ever-
increasing lode of information but through today's
traditional means it is unavailable to us for
regional policy making purposes.

In the ACCESS process, computers would be used both
to retrieve and analyze information. Visual
display would convey both content and relationships
via computer-assisted graphics compatible with color
television. This is a potentially powerful means
of communication. The ACCESS project recognizes
this and in future stages would encourage its use as
a test bed to study and establish visual conventions
which would preclude misrepresentation and protect
the viewer by indicating the tentativeness, accuracy,
authority and timeliness of information displayed.

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23/Cassirer, Henry R., "Learning to See", p. 504.

II. Summary

II. SUMMARY

The purpose of this section of the report is to summarize the concept and design, evolution and implications of a new process to improve regional policy-making. Known as ACCESS (for Alternative Comprehensive Community Environmental Study System) the process is in its design and exploratory stage.

The ACCESS project makes exploration of a complex subject manageable by bringing it down to the level of a very small region. With concerned people of the South Coast Region of Santa Barbara County, California, ACCESS staff and consultants plan to study specific environmental problems (and opportunities) using the ACCESS process. By testing and evaluating the process, the project proposes to develop a systematic organization and methods which can be adapted to policy making in regions from the scale of rural development districts to metropolitan or multi-state regions many times the size of the ACCESS region.

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WHAT IS ACCESS?

ACCESS is an action/research project concerned
with policy making and citizen involvement in a
fast changing time. As such, it must be concerned
with the long range future. Its work is to define
a regional process to help decision-makers and
interested citizens better anticipate, understand,
and manage change. ACCESS is conceived as a
national pilot project to design a continuing
process to increase people's capabilities to
defend and enhance the Quality of Life in their
region as they determine it.

The ACCESS project is sited on the South Coast
Region of Santa Barbara County, California, from
the crest of the Santa Ynez mountains into the
Channel, from Point Conception to Rincon Point at
the Ventura County line. (10 x 60 miles, 163,000-
people)

In its Design Phase, ACCESS has been sponsored and/
or endorsed by more than 25 organizations throughout
the South Coast Region and supported by the National Science
Foundation. (Its funds were administered by the
American Society of Landscape Architects Founda-
tion.)

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The objectives of ACCESS as stated by its members are:

- to locate the information needed to evaluate properly _alternative_ policies of concern to city council members, county supervisors, and other regional policymakers

- to assemble, display and transmit regionally significant and timely information in ways that facilitate more _comprehensive_ approaches to policymaking

- to focus on _community_ policy choices and their long term regional consequences

- to concern itself with regional _environmental_ issues, conceived in the broadest sense of the word (physical, economic and cultural)

- to _study_ for the most creative practical resolution of issues within the region

- to integrate regional policy by means of a _system_ which makes better use of science and technology for furthering the human purpose and "Quality of Life", as defined by the people of the region.[24]

The purpose of the ACCESS project can be stated simply: It is a national prototype to explore new means to assist regional policy making.

But "region" itself is a perspective unfamiliar to most people; regions are typically without an integrated decision-making process; the information required in these fast-changing times is profuse, dynamic, often technical; technology and local leadership are themselves rapidly changing.

The introduction of a new process using new means, such as telecommunications, to assist regional policy making, therefore, is definitely _not_ simple.

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[24] Resolution of ACCESS Advisory Board, February 13, 1975.

23

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Citizen and decision-maker access to information and policy making, on a region-wide scale in this era of complex, rapid change calls for a "systems approach" that makes use of the capacities of computers. This in itself is not automatically accepted, nor should it be. Comprehensive, interactive, computer-assisted graphic information must be made available on a basis that prevents:

(1) centralization of information that is closed to public examination, challenge and use;

(2) manipulation of data and information that distorts or forecloses thoughtful study of alternatives; and

(3) invasion of proprietary and personal information.

Furthermore, annual, categorical grants at the federal level, combined with fractionated political authority at the local level, contribute substantial dis-incentives for organizations and individuals to gather, maintain and process the information that is needed to make long range regional policy. In the South Coast Region of Santa Barbara County, the ACCESS project is attempting to design the sort of informative dialogue regions need, demonstrate how it would operate, and determine what sort of contribution it actually can make.

WHY A REGION?

Region, for the ACCESS project, is defined as the largest territory of common concern of a functioning pattern of human settlements, which has the greatest opportunity to match problems and potentials with resources--whether or not there is presently a unified regional government. Typically, regions in this country are multi-county or multi-state, without focused representation, skilled research, organized decision-making capacity or adequate regional policy dialogue.

A regional perspective strengthens the opportunity to:

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- consider the long range impacts of current actions

- match the scale of the decision process to the scale of problems

- create integrated solutions to problems (transport, housing, water, waste disposal, energy, land use, etc.)

- consider the social and economic impacts of changing the physical environment

- provide for feedback from citizens to other policymakers

- make appropriate use of science and technology.

WHY SANTA BARBARA?

The objective was to pick a region of the nation for this complex exploration where the opportunities for success were believed to be the highest. The resources of the South Coast Region for the purposes of this exploration, as estimated from the outside when selecting it, have all been confirmed. It is true that "The Santa Barbara region probably has the culture of a metropolitan area ten times its size." 25/ (See Section IV, DESIGN PHASE, p. 82)

Reasons for selecting the Santa Barbara South Coast Region for this national exploration include the fact that it is (1) all in one county; (2) recognizable as a region by the people resident in it; (3) small enough for cost-effective exploration, but complex enough with its incorporations, water and school districts to represent the interrelated problems within development districts, major standard metropolitan areas or states; (4) very concerned about its environment, with a long history of citizens skilled at

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25/ John Wilkinson, Senior Fellow at The Center for the Study of Democratic Institutions, ACCESS Workshop, July 2, 1974.

25

working to protect it, rekindled by the 1969 oil
spills; (5) has University of California, Santa
Barbara - a major state university offering a base
of skill and facilities needed by the project - plus other
research organizations; (6) has extensive regional coverage
through the ninth largest cable television system
in the country - with two-way capability in 1976.

CONCEPT AND DESIGN OF THE ACCESS PROCESS

The ACCESS project is an effort to design a
process to improve regional policy-making and to
involve local organizations and individuals in
helping to create that design. The ACCESS process
incorporates capabilities which facilitate self-
education, technology assessment, technology
transfer, research utilization and futures re-
search.

The specific functions which the ACCESS process
would perform are:

  (1) to study and communicate about regional
       problems, options, and their long term
       consequences.

  (2) to provide a neutral forum for policy
       dialogue which emphasizes graphic/visual
       techniques of communication to explore
       alternative regional policies using relevant
       and appropriate technology. (The process
       itself does not decide or implement policy.)

The design characteristics of the ACCESS process
are:

  (1) it is regional in scope;

  (2) it is based in the non-profit, public
       interest sector;

  (3) it is informed by research, making
       appropriate use of science and technology;

  (4) it facilitates policy-makers' (including
       the interested public) access to informa-
       tion and to each other, particularly through

policy dialogue in a "regional situation room", and via remote terminals, and

(5) it stresses the use of modern communication, especially computer-assisted, interactive, graphic telecommunications.

The ACCESS project has ten basic design elements which it will explore in the development of the ACCESS process. These are listed below, briefly amplified. (See Section III, CONCEPT, pp. 56-57, 61.)

People - who is involved

Policy Questions - basic to all issues

Interrelationships - with existing institutions and activities

Social Processes - how people are involved

Intellectual Tools - data, surveys, computer programs, theory

Technological Tools - "situation room", computers, TV, remote sensing

Institution/Organization - to manage the process

Resources - financing, people, facilities

Evaluation - method and criteria

Utilization - adaptability, transferability

EVOLUTION OF THE ACCESS PROCESS

A possible pilot project in the South Coast Region was first mentioned at the Edison Electric Institute Conference in Santa Barbara, January 1972 26/, although the concept of the ACCESS process had evolved for the Principal Investigator over thirty years of work. Consulting contracts with The

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26/See footnote 3.

National Science Foundation in 1973 supported both
a reconnaissance of this possibility and a survey
of relevant graphic telecommunication.27/

By June, 1973, over twenty-five quite-diverse
institutions and civic leaders of the South Coast
Region had committed themselves to support an
exploratory phase of ACCESS. In January 1974
NSF provided the basic support in a grant through
the American Society of Landscape Architects
Foundation.

The uncertain period from June 1973 to May 2, 1974
was spanned with the assistance of a self-selected
ad hoc coordinating committee. This committee and
the diverse nature of the sponsorship made effec-
tive the Principal Investigator's urgings for
wide participation in ACCESS at the exploratory
stage. On May 2, 1974, the first organized meet-
ing of ACCESS was held. Over 90 attended and
organized themselves into six work committees:

> Data and Information, Research Resources,
> Relationship to General Plan, Organization,
> Broadcast and Cable TV, and Computer Sys-
> tems and Graphics.

By May 1974, the historic Lugo Adobe, half a block
from the Santa Barbara City Hall, had been refur-
bished as ACCESS meeting space, consultant con-
tracts let and the small ACCESS staff, later
bolstered by students, assembled. As they had
chosen from the outset, citizens of the region
served as reviewers of ACCESS staff and consultant
work papers.

After an NSF site visit in June, additional funds
were added to the project. The national evalua-
tion of ACCESS initial policies, which took place
during July 25-26, cited the importance of the ACCESS
project and advised, as the ACCESS study groups had

27/See Appendix for both these references and a
complete listing of ACCESS publications and
visual productions.

concluded, that the project needed to demonstrate
its process. Both the evaluators and ACCESS
members said emphasis on graphic means to discuss
policy would require testing with several specific
regional issues before it could be understood in
the community, or its design sufficiently completed
for a 3-5 year regionwide systems test.

By August 21, ACCESS members from all six study
committees completed a series of dialogues
structured to define regional issues and to help
select the most appropriate ones for a one-year
Pilot Test. Out of this experience of work to-
gether a citizen's Advisory Board of 29 was
organized. On October 22 an Executive Committee
of nine was formed. In November 1974 the project
Report to the South Coast Region, incorporating
eight policy recommendations, was delivered; a
half hour television show was produced and broad-
cast three times. Presentations were made to the
County, the City of Santa Barbara and the City
of Carpinteria--the Design Phase was completed.
(See Section IV, DESIGN PHASE, p. 91.)

A draft proposal for the one-year Pilot Test was
delivered to NSF in October 1974. The proposal
of February 28, 1975 was expanded and resubmitted
May 23, 1975. From January to August, 1975, the
Principal Investigator spent two weeks of each
month in Washington making ACCESS presentations
to NSF and federal agencies. In January, ACCESS
membership began study of the sort of non-profit
organization ACCESS should become.

ACCESS ACCOMPLISHMENTS

Specific project accomplishments during the Design
Phase (January 1974 - November 1974) include:

(1) Definition of the ACCESS regional policy
     making process and its ten elements;

(2) On the organizational level, the creation
     of six Study Groups (80 members), an Execu-
     tive Committee (9 members), and an Advisory
     Board (29 members);

(3) The creation of a "Regional Situation Room"

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Evolution of the

Concept Conference	Recon- naissance	Design Phase		Pilot Test

sept jan   feb july   jan   nov   jan   jan

1972   **1973**   **1974**   **1975**   **1976**

basic
concept
suggestion

theory and concept
design

laboratory
validation
of concept

TASK

to suggest
and critique
basic concept

TASK

to make a preliminary
survey of graphic
telecommunications

to ascertain regional
interest

TASK

to complete
ACCESS de-
sign via:
two regional
issue tests,
region-wide
system de-
sign, com-
ponent stud-
ies, evalua-
tion studies

□ **staff,
consultants**

→ **unfunded**

//// **south coast region
participation**

TASK

to design the
ACCESS process
and Pilot Test

to prepare re-
gional policy
reports

30

ACCESS Concept

Regionwide System
Research Demonstration and Verification ——

january   january

1977   1978   1979   1980   1981

laboratory demonstra-   preparation for
tion of application   full-scale field
                               applications

TASK   TASK

to assemble and test   to establish cost/bene-
components of ACCESS   fit criteria and match
policy making process,   various scopes of ser-
including regionwide,   vice with region size
interactive graphic
telecommunications   to continue graphic com-
                              munications research;
to begin research in-   establish training in
to the topology of   ACCESS process
graphic communication
                              to determine potential
to develop staff, data   applications nationwide
bases, equipment tests;   as well as basis for con-
estimate applications,   tinuing ACCESS services
costs and funding,   to the South Coast
including institutional   Region
user charges

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50

which provides a neutral forum for analysis
and dialogue about regional problems and
options using visual means of communication,
and for use and application of relevant.
technology and research results;

(4) Two workshops on geo-based information
systems for regional planning;

(5) Twenty-four Resource papers, including five
surveys, contained in 500 pages of documen-
tation on the process used to create the
design for ACCESS;

(6) A favorable national evaluation;

(7) A Design Phase Report to the South Coast
Region containing sections dealing with:
Issues and ACCESS, Data and Information,
Research Resources, Relation to General
Planning, Organization, Cable and Broadcast
TV, Computer Systems and Graphics, and
Financial Feasibility; and the one Pilot Test.

(8) Three videocassettes concerning the ACCESS
process, one of which includes a section
which demonstrates how various graphic
techniques (using physical models as well
as computer graphics) can be used to
analyze regional policy problems and
options; one defining the purpose of the
project; another demonstrating its trans-
ferability;

(9) Progress reports, briefings and presenta-
tions to use what has been learned in the
Design Phase;

(10) Sustained regional support;

(11) Broadened familiarization and potential
support from federal agencies;

(12) This report to the National Science Founda-
tion.

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FINDINGS AND LESSONS LEARNED

Findings of the ACCESS action/research project--by
its nature--are really an emphasis or restatement
of certain aspects of its accomplishments and lessons
learned:

(1) the ACCESS design evolved from concept, to
theory, to six study committees, to the struc-
ture of ten basic elements during the Design
Phase and as such demonstrated that action/
research directly involving people as parti-
cipants, is a useful technique for applied
social science study;

(2) the utility of a "Regional Situation Room"
as one specific place to facilitate, conduct
and sharpen dialogue, including the evolution
of the ACCESS process itself, was demonstrated;

(3) meaningful discussion about the graphic-
oriented ACCESS process, when carried on with-
out adequate visual demonstrations, ranged
from difficult to impossible;

(4) Understanding and evaluation of the ACCESS
concept--complex, integrative and interdisci-
plinary as it is, and combining action, re-
search and demonstration in actual problems
in real life situations--is very difficult
for an expert in one field of specialty,
or for a person caught up in the operation
of a traditional one-function institution;

(5) federal agency interest in the ACCESS project
stemmed as much or more from searching for
effective ways to discharge their new res-
ponsibilities under the 1969 National Environ-
mental Policy Act (NEPA) as any other factor
(devising new ways to obtain sufficient and
meaningful involvement of citizens in environ-
mental policy making);

(6) the utility of visual communication made
responsive to the viewer for policy making
purposes is more readily recognized by
"operations" than "research" people, and finally;

(7) there is no generally accepted technique to
evaluate an ACCESS-like project, let alone
fund it.

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Three basic principles for establishing a regional
process such as ACCESS were reported July 1973
after the Reconnaissance Phase. They still stand,
namely:

    (1)   Sponsorship of the <u>initiating</u> action must
            clearly gain nothing material for the
            sponsors, which probably means funding
            from outside the region;

    (2)   Efforts to explain and organize <u>must be</u>, <u>and</u>
            <u>be accepted to be</u>, independent of any public
            or private institution or any sector of
            society in the region concerned;

    (3)   Open discussion, participation and support
            should be sought from <u>all sectors</u> of the
            region from the very outset, while avoiding
            involvement in any political contests.

These three basic principles were expanded with a
list of specific suggestions, "a to z."[28]

Six basic lessons learned from the Design Phase of
the ACCESS project (January - November 1974) are
selected here for emphasis. To establish an
ACCESS-like process, plan for:

    (1)   2-3 years' funding;

    (2)   competent staff, at least 3;

    (3)   timing the effort with the school year;

    (4)   a permanent meeting place, at least a
            minimally equipped "Regional Situation Room";

    (5)   early milestone results; and

    (6)   resistance to technology, per se.

Since the ACCESS project is intended as a national
prototype, "Lessons Learned" are reported on at
length in Section IV, DESIGN PHASE, pp. 106-120.

28/Ewald, William R., Jr. ACCESS, the Santa Bar-
    bara Regional Pilot Test, 1975, p. 11.

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NEXT STEP

The next step proposed after the Design Phase is
a one year Pilot Test, preparatory to a 3-5 year
Regionwide System Research Demonstration. (See
also Section V, NEXT STEPS, p. 132.) The purpose
of the Pilot Test is to complete the design of the
ACCESS process. To accomplish this the ACCESS
project would:

(1) Use two specific regional issues, as derived
from citizen dialogue during the Design
Phase;to refine the design and make it more
concrete, using graphic communication:

- Fuel breaks in the Santa Ynez Mountains

- Water quality and quantity as it relates
to land use

(2) Study and define six components of the
Design Elements (p.146), for which more specific
information is required to detail the design
of the ACCESS process and necessary for a
3-5 year regionwide system research demonstra-
tion:

- geo-based data techniques

- machine-readable annotated bibliography
of data and information sources

- machine-readable tabulation of research
resources (people, facilities and
institutions f the region)

- the organization to manage the ACCESS
process

- means to reach and involve hard-to-reach
publics.

- equipment, facilities, media, systems

(3) Evaluate ACCESS project:

- overall policy directions, project design,

future costs

- project activities, organization,
  community relations, process design

- community impact, learning experienced
  via selected visual communication

IMPLICATIONS

To deal with the long range implications of re-
gional policy choices in these changing times is
to deal with the abstractions of information-handling
and societal values. A basic thesis of the ACCESS
project is that to usefully examine policy options
and their long term consequences requires the direct
involvement of more persons and appropriate and com-
prehensible use of science and scientific methods.
"Appropriate" here is taken to mean supportive of
the human purpose and compatible with nature, as
well as cost-effective. "Comprehensible" is here
defined to be perception brought to an awareness
that is useful because valid information is readily
understood and credible.

The one year Pilot Test is a trial exploration of
the ACCESS process. It provides "test case" visual
communications to increase comprehension of
scientific and technical information as related to
issues of regional concern. A 3-5 year regionwide
research demonstration is planned to broaden and
deepen this experience.

Implications of the 3-5 year research demon-
stration are considerable. The ACCESS project will
attempt, through exercise of its process, means of
involvement and use of technology to help close the
gap between scientific knowledge and societal
decision-making. In so doing, the project proposes
to explore the contribution of visual communication
to the complex information-handling, perception and
thought involved in dialogue about regional policy
issues, impacts and options. (See Section I, THESIS,
p. 9.)

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A major contribution of the ACCESS project as a national model may be the organization of the Pilot Test itself. Acting as grant applicant, the University of California, Santa Barbara has a recognized technical competence, combined with organizational and financial integrity with which to assure potential funders. Through its Community and Organization Research Institute (CORI) the university has the ability to locate and apply many different skills to local problems. In fact, facilities throughout the University of California system can be readily integrated into an applied social science research project like ACCESS.

By subcontracting the definition and application of these skills and facilities to a non-profit citizen-based organization, such as the Community Arts Association, a "practical" discipline of esoteric knowledge can be exercised by citizens and policy makers. The coordination of the two is achieved by the Principal Investigator serving in the dual role of Professional Researcher in CORI, and as project manager for the Community Arts Association.

The ACCESS project proposes to use color, pattern, motion, sound, and, in the 3-5 year phase, two way communication to "interrogate" information bases. In the one year Pilot Test this would be achieved through the direct involvement of diverse individuals in defining alternatives, editing their presentations and incorporating their responses into the final presentation. "Interrogating" information bases would be possible during the Pilot Test operation of the ACCESS process to a limited degree through the selected option presentations which could be readily called up in the Regional Situation Room for viewing and discussion.

But the one year Pilot Test is intended only for demonstration, refinement and validation of the ACCESS concept. It actually provides only an indication of the utility of graphic information processing and technology applied to policy dialogue[29]. It

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29/Ewald, William R., Jr. GRAPHICS for Regional Policymaking, NSF, 1973.

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would take 3-5 years to arrange for graphic displays
of information on regional issues that would be
instantly responsive to the "what if" inquiries of
persons in the Regional Situation Room, or at
television terminals throughout the region.

The ACCESS project would, at the same time, create
an important test-bed for research on fundamental
questions of perception and learning. It will take
a sustained effort over three to five years to
provide evaluative research of this complex multi-
variable social science project.

III. Concept

III. CONCEPT

The ACCESS project assumes that this is a time of extraordinary change, that this change is pervasive, and that to manage it will require us to reeducate ourselves to the task.

The purpose of the ACCESS project is to design and explore a process which manages information needs at the regional level for policy making concerning the Quality of Life in a Technological Epoch. As such, ACCESS is concerned with making the complexity of reality comprehensible for the purposes of policy makers, including public participants. A fundamental tenet of the ACCESS process is that visual communication is essential to the understanding of this complexity.

This section defines the concept, objectives and design of the ACCESS process.

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PROBLEM AND NEED

We live in a free society. But if we do not under-
stand the consequences of our choices, in this
fast moving time of change, are we really free?

How can we shape the future effectively rather
than merely react to events? Where can we turn for
the comprehensible information we need in this
Technological Epoch?

Constrained by the extreme pressures of explosive
change, present institutions concerned with manag-
ing the environment have often been unable to:

(1) consider the long-range impacts of present
    actions, for example with regard to such
    problems as energy usage, natural resource
    allocation and environmental hazards;

(2) design and implement integrated decision-
    making processes. This failure has resulted
    in (a) unnecessary and costly redundancies
    in data collection, policy formulation and
    program design; (b) the inability to coordi-
    nate planning efforts in circumstances which
    require swift and concentrated action be-
    yond the capacity of any single local insti-
    tution or agency; (c) the inability to co-
    ordinate vitally needed large-scale programs
    in such areas as transportation and housing;
    and (d) misunderstandings and friction among
    planners and between planners and the lay
    public;

(3) institute systematic and effective programs
    to obtain public feedback on proposals
    likely to incur significant impacts. Public
    involvement is particularly necessary in the
    early stages of a planning process, when
    citizen input is valuable both substantive-
    ly and in terms of forestalling potential
    future criticisms and opposition;

(4) experiment with and employ powerful informa-
    tion processing and graphic technologies now
    available to analyze, synthesize and communi-
    cate regional problems and alternative solu-
    tions to regional decision-makers and citizens.

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The problem, as it has been defined, suggests the
need. It is to solve or at least to ameliorate
the problems to which regions have become increas-
ingly vulnerable. It is true that this need will
be difficult and costly to meet. But the failure
to do so will leave us where we are: increasingly
uncertain about and vulnerable to the fundamental
transformations and upheavals which characterize
the time we live in. In Thoreau's metaphor, more
apt now than when he wrote it, it is a question
of whether man will ride the horse or the horse
will ride man.

Our survival and well-being depend on our ability
to:

(1)   harness our resources effectively to solve
       the problems which confront us; and at the
       same time, to

(2)   protect and promote such values as freedom
       and representative government.

Therefore we need to:

(1)   create more accurate perceptions of problems,
       causes, impacts and options; and

(2)   create better consensus about the problems
       which confront us, and their possible
       resolutions.

Access for people to information, expertise and to
each other is the new necessity of life. Policy
dialogue is a needed key for this new coming
together in society.

Since the problems which confront us occur at all
scales of decision-making--international, nation-
al, regional, state and local--effective policy
dialogues, informed by research, are needed at all
levels. No one planning/decision-making system
can resolve the difficult problems which confront
us. It is vital, therefore, that attempted im-
provements be explored at whatever scale is appro-
priate to the problem. The ACCESS project is
focused at the regional level.

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SCOPE

The scope of the ACCESS process, and the degree
and type of policy involvement sought, calls for
involvement   of all interested parties at every
stage of making a decision: from determining what
data to collect, through its interpretation as
information, to analysis; from the synthesis of
alternative policies, and the evaluation of their
long and short range consequences to their imple-
mentation and foreseeable obsolescence. This is
a matter of continuing data collection,
analysis, communication, and involvement.

PROCESS FOR CREATING A HUMAN ENVIRONMENT
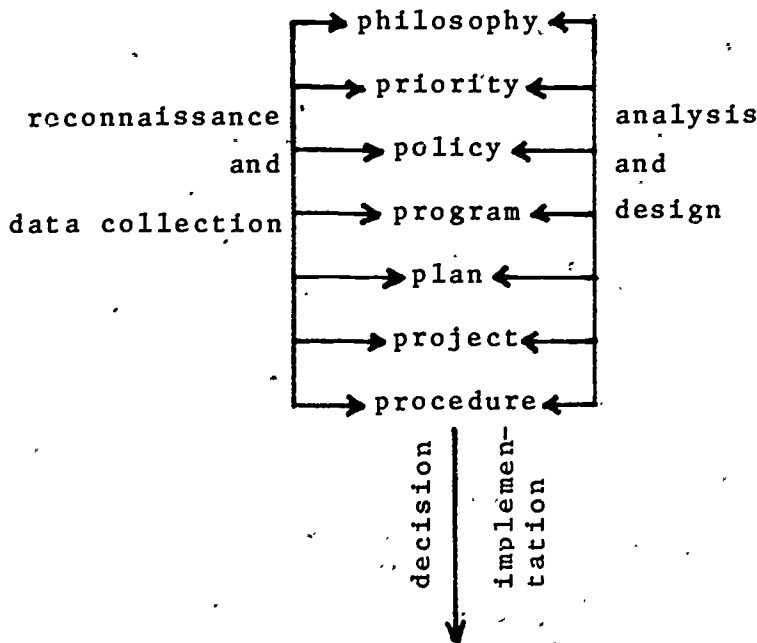
For the development of a future environment that
admits and enhances the rational-non-rational-
extra-rational qualities of individuals, we need
the scientific approach: to observe, relate,
abstract, distinguish, deduce--and more. We must
start with an encompassing philosophy derived
from our values and proceed straight through a
whole (reconnaissance and research, analysis and
design, decision and delivery) system to decision
and implementation.

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It is the balance of human intellect, emotion, and
spirit that is critical. The process of creating
the future social, economic, and physical environ-
ment will either steady or tip this balance....In
attempts to decide upon a course in these stress-
ful days, we can and do oversimplify. We are
sometimes told our choice for building the future
environment is between practical technology (read
"anthill") or spontaneous individual effort (read
"anarchy"). The sensible human choice, of course,
is to take neither. But something must be put in
their place.

We favor enlightened dialogue leading to specific
action. But the nation needs social inventions
in order to make possible intelligent two-way
dialogue now concerning the future we are headed
into, the 200 million of us. That's the function of
the proposed non-profit situation and outlook centers.

To avoid becoming a planned society, we must become
a planning society. It is further suggested that
to achieve a planning society, we need a dialogue
which assumes the good will of all parties in each
situation and calls upon such techniques of factual
exposition as the computer, graphic displays, and
seminars.30/

Through the ACCESS process, expert, complex and
abstract information about the future would be-
come more _manageable_ by society because it would
be as close to people as the "region" with which
people identify--and oriented to that region. The
process would be _credible_ because it would be kept
up to date and would be open to, supported, chal-
lenged, operated and used by all the special
interest groups of a region (as well as business,
government and education)--and it would not take
sides, but it would explore options. Its examination
of alternatives would be more _understandable_ be-
cause it would make full use of all means of

30/Figure and subsequent paragraphs to this foot-
note edited from Ewald, in _Creating
the Human Environment_, Urbana, University of
Illinois Press, 1970, p. 17.

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communication, including "interactive graphic tele-communications".

"Interactive" graphic telecommunications means visual, "graphic", displays that are made respon-sive to questions or statements of the viewer. "Telecommunications" are "any transmission, emission or reception of signs, signals, written images and sounds or intelligence of any nature by wire, radio, visual or other electromagnetic systems including any intervening processing and storage."31/

Modern telecommunications providing for interaction with graphic displays may be the major means to make interdisciplinary regional policy research processes democratic and do-able, even for very large regions.

If we are to manage, conserve and develop the environment, decision-makers and society at large, in a democracy need to recognize the rates, causes, orders of magnitude and complexities of change-- and the critical nature and timing of decisions to deal with change. This implies regional policy research, where communities of people con-sider more deliberately than ever before the long range future consequences of decisions which must also accommodate the present.32/

The center of focus of the ACCESS process is the official decision-maker of government and business. In concentric spheres of influence around the decision maker, the process also includes first his support staff, consultants, boards and commissions; then special interest groups and concerned citizens, and finally, the voters.

Without itself taking sides or making decisions, the ACCESS process for regional policy dialogue

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31/As defined by the Committee on Telecommunica-
   tions for The National Academy of Engineers,
   Peter C. Goldmark, Chairman: Communication
   and the Community, NAE, 1972, p. 143.

32/See Footnote 3.

provides comprehensible information and citizen
feedback for the regional policy-makers. The
process involves neutral forums for policy dialogue,
informed by research, which attempt to understand
choices, consequences and their connection to the
past, the present and the future environment.

Environment is commonly defined as "surroundings"
or "all that surrounds us: the elements of nature
(including Man himself) and the elements created
by Man, artifacts as well as waste products".33/
In this report, the term environment is used in
its broadest possible social and economic, as well
as physical, context.

What interests us most is the mutual relationship
between organisms (including humans.) and their
environment. That relationship is the definition
of ecology. For human beings this is more than
a physiological and psychological matter. "Human
ecology" also comprises cultural, social, econom-
ical, political and spiritual aspects of environ-
mental relationships.

THE REGIONAL POLICY-MAKER

It can be seen that the term, "regional policy-
maker", as used in the ACCESS process, concerned
with as broad a definition of environment as
given above, is all inclusive. Regional policy-
maker includes those who contribute to the formu-
lation of policy as well as those who decide
policy. Both are considered part of "policy-
making" in the ACCESS process. Therefore, inter-
ested citizens, as individuals and as organization
members, or voters, are policy-makers--as are
corporation directors, educational administrators
and government officials, elected or not. That
is a substantial expansion of the common use
of the term policymaker and contributes significant-
ly to the definition of the ACCESS analysis/
synthesis/communication process.

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33/International Federation for Housing and Plan-
    ning Bulletin, June 7, 1971.

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Regional decision-making is under real time pres-
sures. Yet, it must attempt to take into account
the complexity of interrelationships among many
variables, over different geographic scales, at
varying increments of time. Simultaneously, it
should account for changing technology, and ack-
nowledge the changing expectations of people.

A listing of assumptions about the regional policy-
maker may be helpful here; such a person can be
described as:

(1)   an intelligent, basically honest "generalist";
(2)   under political and time pressures to make
      decisions;
(3)   inadequately informed and full of his own
      questions;
(4)   impatient with details, but skeptical of
      summaries;
(5)   able to give only severely restricted time
      for analysis;
(6)   suspicious of computers (and their program-
      mers);
(7)   uncertain about typing into a computer
      terminal;
(8)   unable to comprehend, unaided, the inter-
      relationships of many variables;
(9)   probably limited in his ability to use
      maps, charts or graphs;
(10) skeptical about the validity of long-range
      projections (and expert opinions);
(11) limited in his comprehension of develop-
      ment factors, important to the region, which
      work at different geographic scales;
(12) only partially informed regarding technology
      and its impact;
(13) not really convinced that major social and
      economic changes are underway;
(14) a believer in adaptation, not radical change;
(15) seeking respected authority on which to base
      his decision.34/

34/See Footnote 29, p. 3.

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PERCEPTION AND CREDIBILITY

Different groupings and combinations of people are involved in making policy for a region:

(a) an aggregation of public officials without an established regional political constituency;

(b) businessmen and other administrators with differing short-term concerns, some controlled from outside the region;

(c) citizen-based groups which may or may not be regional in scope, each with different purposes in mind; and

(d) many other competent people, including those in universities and in the professions, who don't yet relate to "region" as important to what they do and how they live.

To exchange concepts, issues, information, analyses, judgments, and feelings about regional issues with these regional policy-makers--in such a way that the basic choices buried in pending current decisions are related to alternative futures-- requires more than valid analysis and communication. The process as well as the information it handles must be accepted as credible. A major aspect of the credibility of information, obviously, is its source. But how the perception of information affects credibility is more significant than the scant attention it has been given to date. This is a matter not only of how minds are already "set" when they receive information, but also how information is presented to them. The physiology and psychology of how we see and receive information is important to policy-making.

Information, even if it is accurate, valid and reliable, must be comfortably assimilated by a person, to the point it "feels right", before it becomes credible. It may be that information must become something akin to an "insight" or "intuition" before it leads to

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decision. If intuition, in turn, can be defined
as subconscious reasoning, then whatever helps
that reasoning has a significant effect on credi-
bility.

The important point for the policy-maker--besides
the accuracy, validity and reliability of the in-
formation, analysis and synthesis provided--is
whether it is readily assimilated by him. He
probably needs to "sense" as well as to calculate
decisions rationally. It can be assumed, how-
ever conscientious the effort, that the informa-
tion and data provided him will almost always be
inconclusive. It is especially important there-
fore, to recognize that information has to "feel
right" before he can decide with it. (One needs
to feel somewhat more comfortable with one view
than with others in order to make a decision at
all--except the decision not to decide.)

Ultimately, the policy-maker must leap from the
best that can be quantified and reasoned, across
what cannot be known, to his position or decision.
It's a leap of faith, or what policy analyst Sir
Geoffrey Vickers terms "the passions of judgment,"
(beyond reason alone).

There are many subjective elements in arriving at
a decision or a position. The purpose for bring-
ing more of the capacities of science and tech-
nology to regional decision-making is to quantify
those elements which are quantifiable, to convey
analysis and information with credibility, to
help synthesize complex problems and to reduce
uncertainty.

Recognizing that all alternatives for each issue
cannot be explicitly stated and then precisely
quantified, there comes recognition of the need
for an accurate, credible process that generates
and reinforces sound intuitions in the policy-
maker. Much of the process we are seeking to
invent may evolve in the policy-maker(s) mind(s).
Perhaps we should recognize that what we are at-
tempting with visual communications, especially
interactive graphic telecommunications, is to
establish new capabilities for feeding informa-
tion to those minds. An example of that "process"

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.may be how the concept of Spaceship Earth was
quickly "sensed" from the Moon photographs taken
by the astronauts. An entirely new perspective
was grasped. (How puny the words of astronauts
compared to the perception of their photographs!)

Non-verbal graphic symbols communicate to many
levels simultaneously. Such graphic communica-
tions may become a "universal" language for
policy-makers, managers, workers, learners and
consumers about their region. The same informa-
tion, used differently by researchers, policy-
makers and the general public, may be communicated
in the same form, through the same technology,
using the same systems.

If people do not understand because they fail to
perceive the "whole" of complex systems, because
they lack a "perspective of reality," perhaps, by
using common graphic symbols, people of a region
can perceive more perspectives in common, includ-
ing the understanding that different people, with
the same information, may arrive at different
perceptions. If so, then to facilitate the per-
ception of "wholes" will be among the greatest
contributions graphic non-verbal communication
can make to constructive regional dialogue.35/

INFORMATION, POLICY-MAKING AND DECISION

In a democracy both decision-makers and society
at large must be aware of the rates, causes,
orders of magnitude, complexities and consequences
of change—and the critical nature and timing of
decisions to deal with change. In our times this
means regional policy making informed by research,
where communities of people consider more delib-
erately than ever before the long range future
consequences of decisions which must also accommo-
date the present.36/

35/this subsection is edited from Ewald, see footnote
   29, pp. 4-5.
36/See footnote 3.

Information, policy making and decision are each
very big subjects. Information, for instance, is
necessary for decision, but systems which improve
the supply of information are much easier to
describe than systems to improve decisions.   It
is important to distinguish between these two as
Downs has.37/ Knowledge leads to power; the
handling of information is fraught with potential
political impacts. Present technical possibili-
ties for better information handling to improve
the quality of decision will no doubt be realized
in time, but only as the user understands that
potential, and only as the information is made
responsive to him.

> "...(users) are to a great extent unaware
> of what data can be acquired, how to gain
> access to the data and how to use it once
> it is obtained....It cannot be stressed
> too strongly that we have made great strides
> in data acquisition but have far to go in
> data utilization 38/...frequently (we) do not
> understand what characteristics information
> must have in order to be useful for decision-
> making." 39/

It is very difficult to change the day to day
operations of government (or business, or any other
large enterprise). Unaided by clear demonstra-
tions of the utility of a government-wide informa-
tion-handling system, for instance, there will be
very few leaders able to take on and win over all
departments of a city or county at once. Regard-
less of the utility and lower cost of the "total"
approach, department by department resistance can

37/Downs, Anthony, Urban Problems and Prospects,
   Markham Publishing, Chicago, 1970, pp. 251-263.

38/Dr. S. Benedict Levin, ex-Vice President, Earth
   Satellite Corporation, testimony before the
   Committee on Aeronautical and Space Science of
   the U.S. Senate on S.2350 and S.3858 (August 6,
   8, 9 and September 18, 1974).

39./Frank G. Zarb, Associate Director, National
   Resources, Energy and Science, Office of Manage-
   ment and Budget, testimony as above.

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be anticipated. And information-handling techno-
logy is still improving at a rate that provides
a reasonable argument against a city or county-wide
application "now".

The ACCESS project in its 3-5 year demonstration
stage would afford a demonstration of the relation
of governmental departments to a region-wide re-
gional policy information and dialogue system.

There remains also a major question about policy
making. How open should it be? And who should
decide? "Openness" is desirable as long as it
is not perverted to play tricks with a process to
avoid decision. "Sunshine" laws can probably go
too far, but clandestine and paternalistic sorts
of decision making already have. "Black and white"
positions on such issues are not; in themselves,
reasonable.

> "The best evidence of anthropology, as Franz
> Boas pointed out, is that the judgment of the
> masses is sounder than the judgment of the
> classes on broad questions of policy, where
> sentiments and values are concerned. This
> doctrine must not be perverted into a claim
> for the common man's expertness in technical
> or artistic matters."40/

The balance of people and expertise is at issue.
The reasoned view in these times is more often
"both/and" rather than "either/or". The ACCESS
process, employing visualized regional policy
dialogue, facilitates the "both/and" approach.

At least as important as the accuracy and timeli-
ness of the information required for regional
policy making today is whether it is understood
and believed. Confidence in the objectivity of
the organization that manages the information
process itself is a vital aspect of that informa-
tion. The ACCESS design proposes a non-profit
organization constituted by and responsive

40/Kluckholn, Clyde, Mirror for Man, New York, Fau-
    cett World Library, A Premier Book, 1960, p. 197.

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to the many different interest groups of a
region to finance, staff and direct the ACCESS
process.

DESIGN THROUGH ACTION/RESEARCH

Design of the ACCESS process is to be found, in
part, only in the doing. The ACCESS project as
research, therefore, has confounded more than a
few. Real issues, people, experiences and cir-
cumstances of the region selected are in them-
selves important parts of the project, and the
means for refining the design for the ACCESS
process. Obviously, they cannot be "controlled
variables" as is true in physical and natural
science research. The ACCESS project is, and
must remain open to, and involve, a broad spectrum
of interest groups, each contending differently
with the changing and conflicting realities of
the region. It cannot know in advance precisely
"how" to go about the design it is involving the
people of the region in creating. The "how" is
actually a major part of what the project is
attempting to explore and learn.

As an action/research project ACCESS has been
neither "action" the way local civic organizations
or city councils think of the term, nor is it
traditional "research". To many traditional
scientists ACCESS may look suspiciously like a
demonstration project. "Demonstration" happens
to be the appeal of ACCESS to most mission-
oriented federal agencies. They seek specific
"demonstrations" to provide solutions to problems
leading to direct application nationwide.

To combine action with research, people and tech-
nology, society with science (and each of these
with each of the others at the regional level) in
these fast-changing times, requires not only pre-
cise but many different kinds of knowledge. The
ACCESS project asserts that the opportunity needs
to be created to study means to work that know-
ledge into specific issue resolution with "wisdom".
"Wisdom", as it is conventionally defined, is
seen as more likely to occur through regional
policy dialogue. Such dialogue must recognize

and facilitate the potential for different con-
tributions from many different people for self-
government by enlightened citizens.

An impediment to NSF continuation with the ACCESS
project is the "action/research/demonstration"
character of ACCESS research. The ACCESS project
approach, while rigorous, and open to evaluation, is
interdisciplinary and it is not orthodox "scientific
method." This has made it difficult to review and
fund ACCESS from the start. Even though the National
Science Foundation, in its RANN program, has
the primary national charge for the relatively
unknown business of learning how to apply science
to civilian human affairs, the traditional basic
scientific research orientation of its review
process makes this difficult.

> "We claim we live in a scientific era, but
> the truth is that, as presently managed, the
> scientific enterprise is too lopsided to
> allow science to be of much use in the
> conduct of human affairs. Scientists shy
> away from the problems posed by human life
> because these are not readily amenable to
> study by the orthodox methods of the natural
> sciences."41/

Similarly, the people of a region must have practical
demonstrations, in the early stages of an ACCESS-
like project, to warrant their continued cooperation
and future support. What will they accept as
"practical" (that is still a bona fide innovation,
with its attendant high cost when high-skill tech-
nology is involved)? As to federal agencies, their
requirements for demonstrations are often so
narrowly constrained by Congress that the relation-
ship of functions attended by different agencies
is slighted. Or jurisdiction over a function can be
so rigidly specified by current realities that even
innovative one-time explorations may be difficult
to support.

41/Dubos, Rene. So Human an Animal, New York,
    Charles Scribner and Sons, 1968, p. 216.

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ACCESS Research

BASIC ELEMENTS	QUESTIONS TO BE ANSWERED
1. People	Who is to be involved, to design, construct, and use the ACCESS process?
2. Policy Questions	What are the important policy questions, regardless of what specific regional policy issue is being examined?
3. Interrelationships	What is the relation of ACCESS to other institutions in the region and to such processes as federal, state and local government?
4. Social Processes	What are the social process options available and used to address and communicate about the important policy questions?
5. Intellectual Tools	What are the intellectual tools available and used to address the policy questions?
6. Technological Tools	What are the technological tools available and used to address and communicate about the important policy questions?
7. Institution-Organization	What is the institution for the ACCESS process, its bylaws, organization and membership?
8. Resources	What are the resources needed to operate the institution and process, for example, funds, staff and facilities?
9. Evaluation	What are the methods and criteria for evaluating ACCESS' policies, actions, impacts and design?
10. Utilization	What are the means for using the products produced by the ACCESS process, within and outside the region?

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Design Matrix

DESIGN PHASE ACTIVITY			NEXT STEPS	
work	products	status	1 yr pilot	3-5 yr test
survey and invitation	diverse, skilled persons involved	ACCESS concept not widely understood, but becoming known; assimilated	surveys and community involvement to be deepened	ACCESS staff, expert roster, leadership to be established
regional policy, information functions defined	two regional test issues selected, basis of prototype analysis and presentation set	study of alternatives established as policy	basic policy questions to be defined, tested	means to pick policy issues for regional study to be set
local and federal agency discussion, group study	liason persons identified, involved	informal relationships established	formal interest of government, university, institutions to be tested	basic formal working relations to be established
media, meetings, study, dialogue, survey	publicity, ACCESS organization	policy dialogue procedures defined	involvement and impact of process to be tested	outreach, education and research transfer techniques to be refined
surveys, workshops, consultant and group study	computer programs, survey, data needs identified for Pilot Test	subcontracted work for Pilot Test specified	geo-based data, bibliography of sources, other tools to be defined or studied	region-wide system, data base, projections, programs, etc to be tested
computer polling sampled: cable TV/computer compatibility established	Regional Situation Room defined, sited, initiated.	equipment for Pilot Test selected	tools tested, interactive system to be selected	interactive system tools to be tested
diverse sponsors and membership	80 person organization; 29 Advisory Board, 9 Executive Committee	basis established for incorporation	ACCESS project assimilated into Community Arts Assn. (Inc.1923)	corporate form, relation to university to be finalized
ASLAF and local support realized, NSF support doubled	basic objectives of initial grant for Design Phase realized	federal support broadened considerably	university as applicant, federal lead agency and support established	basis for sustained public, private utility, education service charge support to be tested
site visits, national evaluation, peer review	favorable evaluation, broad government support	national significance of study area established	policy, program, operations, audio-visual communication to be evaluated	cost-benefit, scale, scope, operations, system impact to be evaluated
TV, Washington, national conference, NSF & other federal agency presentations	audio-visual and published reports	reports and films suitable for reproduction	nationwide distribution to be sought	ACCESS process to be adopted as Bi-centennial Era prototype; other

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THE DESIGN TO DATE

Regional policy making concerning the conserva-
tion and development of the environment is complex,
difficult, important--and in need of improvement.
Progress is being made in managing the environ-
ment in different places throughout the country,
including in Santa Barbara County, but there are
few who would claim they had mastered environ-
mental management, policy research and citizen
involvement.

Purpose

The purpose of the ACCESS project is to design
and test a new process for considering regional
issues and options which would be applicable to
other areas of the nation, as well as to the
South Coast Region of Santa Barbara County.
(The South Coast Region, 10 x 60 miles, 163,000
people, is a small example of typical regions and
their processes.)

Issues include conservation and development of
the region and its people in the overall context
of Quality of Life, as defined in the region:

- Work and Recreation

- Health and Education

- Energy and Environment

- Water Supply and Land Use

- Transportation and Communication

- Population Growth and Distribution

The ACCESS project involves the use, where appro-
priate, of science and technology to help study
and communicate about regional issues and options.
In the ACCESS process being designed, science
and technology are regarded as means to help solve
problems in regional decision-making rather than
as ends in themselves. It is anticipated that the
results of a number of recent federally sponsored
research projects, as yet little used, would be

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tested and incorporated into the ACCESS process, beginning with the ACCESS Pilot Test.

The ACCESS project is especially concerned to establish the competence and credibility of the process itself and is keenly aware of the contribution of communication to that end. Interactive graphic telecommunication is an essential component of the ACCESS process (along with all visual media-- models, aerial photography, graphs, etc.).

The importance of visual communication to the design of the ACCESS process is in the fact that visual communication has a capability to deal with concepts, abstractions and multiple relationships, across different knowledge bases, in ways that can open the way to more creative understanding, involvement and resolution of complex problems.

The ACCESS project is concerned with designing means to make complexity comprehensible. For the purposes of policy makers, including public participants, this is believed to entail visual communication by means of color, pattern, motion, and sound enhanced by its being responsive to queries and statements of the user.

While not contending that "the medium _is_ the message", the ACCESS project does take a stand that in these fast-moving times, without the correct medium there may be no adequate message. Complexity, interrelatedness, expectations, rate of change--and the desire to affect change, combine to suggest that the stress today on resources, environment and on people call for some breakthroughs in communication applications. Fortunately the technology needed for regional policy-making is at hand. However, it is in need of selection, combination, refinement, and test applications.42/

42/See Footnote 29.

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Characteristics

The characteristics of the ACCESS process, when fully designed and implemented, can be stated as:

(1) Regional in scope;

(2) Based in the voluntary association sector;

(3) Informed by research;

(4) Making relevant use of appropriate science and technology;

(5) Equipped with a "Regional Situation Room" with the capacity for information processing and graphic display that is interactive;

(6) A means to focus the information, education, research and organization resources of a region to study and communicate about regional problems and options;

(7) The capacity to pose alternatives and trace the possible future consequences of current actions, events or decisions;

(8) An open, interactive process that involves policy-makers, including interested citizens, all elements of the public, and a wide range of organizational resources in the region;

(9) Feedback by means of which citizens may communicate with policy-makers concerning regional policy problems and options while remaining neutral itself;

(10) A means by which relevant NSF and other agency research can be applied;

(11) A way to solve regional problems by means of improved perceptions and consensus about regional issues and at the same time, to strengthen freedom and self government.

(12) A neutral forum for dialogue that does not take sides or implement policy.

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TEN BASIC DESIGN ELEMENTS

A significant part of the work of the Design Phase
was the isolation and definition of the ten basic
elements of the ACCESS process. (It may be helpful
at this point to refer to the diagram depicting
the Evolution of the ACCESS Concept. [pages 30-31].)
These ten elements have become the context and
structure for both the one year Pilot Test and the
3-5 year Region-wide System Research Demonstration
and Verification. The extent of community interface
and the context of ACCESS research is given in the
ACCESS Research Design Matrix, page 56. What
follows here is a discussion of that chart.

(1) People

People are the most important, dynamic and pervasive
of the ten basic ACCESS elements. People as
"uncontrolled variables" enormously complicate
the research design, but that is the nature of the
ACCESS process and the difficulty of this sort of
applied research.

Who is to design, construct and use the ACCESS
process? Who will select issues, define options
and consequences and approve their presentation?
What people of scientific and professional exper-
tise; what decision makers, citizens, educators,
spokesmen for various points of view and differing
interests are to be involved to use research,
appraise options, facilitate technological
assessment and technology transfer?

Design Phase. The ACCESS project has been cited by
experienced local community leaders as the most
diverse assembly of people and capabilities in the
South Coast Region. This diversity is a require-
ment of interdisciplinary regional policy research
and a necessity if its work is to be credible. At
the Design Stage this broad an involvement without
"practical demonstration" has served only to intro-
duce the concept in the region: It cannot be said
it is well understood.

Pilot Test. A separate group of citizens will be
organized from the region to help define each

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policy alternative for the two pilot issues
selected. The expertise required for assembling and
presenting these alternatives will be subcontracted
to the Forest Service and the University of California,—
subject to citizen guidance. During this period the
survey to develop a machine readable roster of skilled
and experienced people will be continued.

System Test. The 3-5 year system test will provide
the continuity required to select and train staff,
to identify strong leaders and educators and to
develop skill and experience rosters and liason with
special groups and hard-to-reach minorities.

(2) Policy Questions

For each regional issue study there are basic policy
questions to answer. The emphasis, specifics and
detail, or difficulty of analysis and presentation
for any given issue will vary, but it is possible
to address each issue with a standard set of questions.

What is the problem? What are its causes? What
are the options (goals and means) for coping with the
problem? With regard to the options: What are
the impacts; problems of and principles for
implementation; conditions for success; costs
and benefits; criteria for evaluation; trade-
offs; priority; and recommendation?

Design Phase. Through a series of deductive work
sessions the diverse membership of ACCESS
established the function and the issues which seemed
most appropriate for an initial demonstration of
ACCESS process capabilities. The function selected
was for ACCESS to serve as a neutral regional forum.
The issues it selected to examine for options and
long term consequences were: 1) fuel breaks in
the Santa Ynez Mountains, and 2) the impact of
water quality and quantity on land use.

Pilot Test. The first basic policy to be demon-
strated is that the ACCESS process can without
bias, identify and communicate policy choices and
consequences of selected regional issues. The
experience of this practical test is itself expec-
ted to help clarify and refine the set of basic
policy questions that will make the ACCESS process
operative.

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System Test. The issues which the regional forum will examine are in themselves a potential source of bias. (A region-wide accepted procedure for selecting study issues, such as ballot initiatives or referenda will be established for the System Test. At that time other functions such as secondary or adult environmental education and an information clearing house may be tested as well.)

(3) Interrelationships

The ACCESS project admits the complexity of reality. This requires that relations be developed with institutions and sources of decision and information at the federal, state, and local level. The acknowledgment of real and vital interrelationships is a basic means by which the total context of any given policy question can most readily be identified. For instance, certain issues can be resolved at the local level while others are matters for national decision (which may be influenced with competent regional analysis and presentation). Also the context of certain issues may be more economic than aesthetic, or conversely, but both are involved, etc.

The ACCESS process intends to assemble and make available skills and tools that no one existing institution can afford or appropriately operate. In that ACCESS takes no policy decisions itself, nor attempts to implement any, it should be able to sustain relations with diverse groups. These groups may themselves be continually combining in coalitions, often temporarily, regarding a specific issue.

Design Phase. The acceptance of the ACCESS project to date has been for its theory of the contribution of communication, involvement, education, and feedback to general planning and policy-making. Locally and nationally, agency presentations, discussions and study have served to provide official letters or resolutions of support and to establish liason persons and tentative discussions of future involvement.

Pilot Test. From these informal beginnings, formal interest and specific offers of support have grown, especially within federal agencies which recognize in the ACCESS project a potential approach for research and learning in some of their toughest problem areas--credibility, involvement, rational

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understanding. Research into the presentation
of issues is underfunded. The ACCESS process
is now ready for testing on a pilot basis with
the University of California as applicant
and a consortium of federal agencies with related
missions as funders and users of ACCESS project
research. The community-university-federal agency
relationship is the core of the national prototype
ACCESS is intended to become.

System Test. From the Pilot Test it will be
possible to define and formalize relationships,
services, financing sources regarding federal
state and local government--and with education and
business.

(4)   Social Processes

"Social Processes" are the methods by which people
of the region are involved in addressing important
policy questions. This includes such factors as
duration, sequence and organization of the activi-
ties for the dialogue; number and roles of the
individuals involved; geographic scope; and
remoteness of the issue addressed in terms of time,
space and level of abstraction.

Who and how many individuals are involved? In
what way? What activities do they perform? How
are the individuals and activities organized?

Design Phase. First, a score of diverse
regional institutions were committed as sponsors.
Then the ACCESS ad hoc committee identified indivi-
duals whose primary work became the business of
contributing to the study group which they had
joined. This interest was sustained by the
satisfactions of involvement and ultimately led
to the recognition of the establishment of an
ACCESS organization and its policy dialogue function.

Pilot Test. Work on the issues selected for pilot
study will demonstrate the capability of the
process to a) identify and involve local leaders
with experience and expertise related to specific
regional issues and b) make a valuable contribu-
tion to the education of individuals and to improv-
ing regional policy decisions.

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System Test. Having "indicated" by the Pilot Test
the potential of the ACCESS process, the work of
the System Test will be to examine, test and
refine the ability of ACCESS to provide practical
services, learning experience and research as they
relate to the "Quality of Life" in the region.

(5) Intellectual Tools

The uncertainty and complexity involved in regional
issues call for an awareness, skill and selection
of the appropriate "intellectual tools" to help
address basic policy questions. These tools include,
for example: trend extrapolation; use of expert
opinion; Delphi; relevance trees; scenario writ-
ing; checklists; PERT charts; cost benefit, cost
effectiveness, risk and sensitivity analysis; his-
torical analogy; model building, gaming and simula-
tion; decision theory; decision trees; matrices;
cross-impact analysis; networks; morphological
analysis; statistical correlation; planning,
programming and budgeting systems; and manage-
ment by objectives.

Design Phase. Traditional survey, workshops, consul-
tant, staff and group study were the means by which
the intellectual tools for the Pilot Test were
identified. Data availability for instance, was a
determinant of the test issues selected.
University and other experts helped identify
the computer program techniques for research
presentation.

Pilot Test. The number of intellectual tools to be
employed will be expanded, and described as they are
used to examine the Pilot Test issues. Further,
the Pilot Test will establish the principles and
technique for the geo-data base and the compila-
tion of a machine readable bibliography of data
sources for the region. An initial cost-benefit
study of region wide systems proposed will be attempted.

System Test. The definition, ordering, develop-
ment and application of a whole range of tools will
be possible within the continuity of the 3-5 year
Regionwide System Test. These would include an
accessible interactive data base, simulation,
feedback and more.

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(6) Technological Tools

Technological tools useful to synthesize and display issues and options include: maps and physical models; aerial photography and satellite imagery; gaming and simulation; computer modeling--involving the use of interactive computer graphics; citizen polling and feedback systems and broadcast and cable television.

Telecommunications are important to the analysis, accessibility and comprehension of regional policy data. The data will be experienced first in visualized dialogue in the Regional Situation Room (described in the subsection that follows). Ultimately, coaxial cable television will help provide the capability to study and communicate about regional problems and options, and to obtain feedback and stimulate discussion throughout the region.

Design Phase. With the assistance of consultants the project established the feasibility of computer polling to stimulate dialogue, of making computer graphics compatible with two-way coaxial cable television in the region, and defining the Regional Situation Room concept. Even implemented with traditional equipment, the Situation Room was crucial to the completion of the Design Phase as planned. The equipment required for the Regional Situation Room for the Pilot Test was selected (see p. 100) as well as that to be used in creating the alternatives.

Pilot Test. The presentation of chosen options and their consequences, for each policy issue, will incorporate the use of computer assisted graphics. During this test the technological tools to be used in the 3-5 year System Test will be determined.

System Test. The pilot test will determine the extent of an interactive region-wide system for graphic telecommunications using coaxial television. The research and demonstrations to test it will be carried out in the System Test.

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(7) Institution - Organization

A claim of the ACCESS concept is that as the long
range consequences of sensitive regional policy
issues are more clearly understood and more
broadly communicated, challenges of credibility
will increase in importance. The credibility of
the organization that manages the process which
studies and communicates about the future "Quality
of Life" in the region will greatly affect its
utility. If the process is to function as intended,
there must be community acceptance of both the
competence and the objectivity of that organization.

Design Phase. To assure the region of the integrity
of the ACCESS project, widespread and diverse
involvement was sought from the outset. Sponsors
and participants, both chosen and self-selected,
contributed to the project, and funds were managed
through a national professional society foundation,
The American Society of Landscape Architects
Foundation.

Those who were particularly concerned with the
management of the ACCESS process joined the study
group on organization in May 1974, and examined
alternative organizational forms, including
existing institutions in the region.

Once the functions and requirements of the ACCESS
process were clarified, the 80-100 members,
organized in six study groups, established a 29
person Advisory Board with a 9 person Executive
Committee. A subcommittee reported to the Board on
the sort of broadly representative non-profit
corporation that seemed most appropriate.

Pilot Test. As it has developed, the University of
California, Santa Barbara will take responsibility
for the ACCESS project Pilot Test. Coordination of
the University's study and research with the region,
and the involvement of policymakers will be managed
through the venerable Community Arts Association,
incorporated as a non-profit citizen's organization
in 1923.

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System Test. The investigation of the ACCESS
process, having been soundly based in the
community during the Pilot Test, will be further
refined and formalized. By the close of this
stage a competent staff should be trained and
experienced enough to take over from the
Principal Investigator.

(8) Resources

Resources, as defined here, include the staff.
participants, funds and facilities required
for the ACCESS process. Meaningful local
involvement in the project from the outset
was considered essential if the ACCESS concept
was to "take hold" and be adapted to the
region, as well as to provide evidence to
NSF of the region's genuine interest. By
June 1973, broad regional support for the
Principal Investigator's concept was evidenced
by the diverse sources of the $12,000 that
was committed. NSF awarded $67,500 in
January 1974.

Design Phase. The timing of the NSF award con-
tributed considerably to the delay and resource
requirements of getting underway. The presence
and mode of operation of the ACCESS project was
dramatized by opening its public efforts with
the Regional Situation Room. With additional
local in-kind resources, and a doubling of NSF
funds through supplemental grants, the objectives
set for the Design Phase were realized. During
this time, briefings made by the Principal Investi-
gator included representatives not only of various
departments of NSF but many federal agencies.
These introductions to the ACCESS concept paved
the way for presentations which were made in 1975
to each federal department.

Pilot Test. The shift of the ACCESS project's
broad sponsorship from the Research Applied to
National Needs (RANN) program of NSF to the
Department of Environmental Education in the
Department of Health, Education and Welfare has
maintained federal agency interest in and financ-
ing of the ACCESS project. Local funds are
not being sought in this stage, which is intended

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as a national demonstration of the ACCESS concept
rather than as an immediate resolution of a local
problem.)

System Test.   Given the national recognition of
the ACCESS project, its successful operation
during the Pilot Test is intended to locate the
national, state and local support required to
sustain a 3-5 year Region-wide System Demonstra-
tion and Verification.   The basis for
sustained public, private, utility and
education support (and fees charged) will
depend on the feasibility and scope
of services provided.

(9) Evaluation

To rigorously examine policies, actions, impacts
and design of the ACCESS process requires documen-
tation, close monitoring, wise judgment and the
sophisticated application of evaluative research.
Validation of the ACCESS process will involve
quite different methods and criteria than those
common to the natural and physical sciences.   The
nature of ACCESS as a research project has been
implied by its avoidance of the term "experiment."
Experiment implies control of variables, or the
use of a control group in research design, that is
simply not possible for the ACCESS sort of complex,
applied social science research project.

Instead, the term "national prototype" has been
used to describe the ACCESS research   Rigorous
examination of the project by recognized experts
who understand the purpose of the project, yet
are independent of it, has been an integral part
of its research design to date.

Design Phase.   During the Design Phase the NSF
program manager visited the ACCESS project three
times,   a team was sent by NSF to examine the
project in June 1974 before the first supplemental
grant was approved, and in July 1974, the mid-pro-
ject national evaluation took place in Santa
Barbara.   All these, and the sum of the peer
reviews of the NSF application for the Pilot Test

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recognized the significance of the national problem that the ACCESS project confronts.

During this time the broadening of federal agency interest and the sustaining of local support was itself a form of evaluation.

Pilot Test.   Evaluation during the Pilot Test has been designed to promote an independent assessment of the workability of the ACCESS concept with respect to the elements that are involved in the pilot issues. A student control group, specialized (fuel break and water) knowledge group and the public that is involved will be surveyed. In addition, responses and interactions of persons taking part in the ACCESS process will be monitored for the extent to which issues are narrowed or broadened, the intensity of feelings and the degree of polarization. This evaluation is to be conducted by researchers of the University of California, Santa Barbara, not involved in the development of the ACCESS project.

System Test. The 3-5 year span of the System Test will permit sophisticated use of evaluative research not possible during the one year Pilot Test.   The impact of various modes of visual communication and interaction through graphic telecommunication will be measured and cost-benefit studies of services provided. User evalua-tion within the region will be an important part of the test leading to a matching of the scope of services to the scale of region.

(10)   Utilization

Utilization refers to the transfer of the perspective, process or products produced by the ACCESS project. A major factor of utilization is simply that understanding of the project, and what it has learned be widely disseminated. Another major factor is to structure the research itself so that it has the potential of wide application.

The South Coast Region of Santa Barbara County has been identified as both unique and typical of other regions. It is unique in its small scale combined with being rich in interest, research capabilities and facilities. It is typical in

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the content, entities, and manner in which policy
making for the region is undertaken. Research
which the ACCESS project undertakes is structured
for maximum utilization elsewhere.

Design Phase. Briefings to NSF and other federal
agencies, national conferences, reports and tele-
vision production have documented and begun the
dissemination of the work of the ACCESS project.
These reports are suitable for reproduction and
national distribution.

The project approached the design of the ACCESS
process and the subsequent Pilot Test as a poten-
tial "standard" from which all regions could learn.
While this approach was not expedient to winning
local support it has helped assure the trans-
ferability of what is learned through the ACCESS
project.

Pilot Test. Both ACCESS members and mid-project
national evaluators agreed that a Pilot Test was
a necessary prelude to a 3-5 year System Test.
There was need for evidence within the region of
how the ACCESS process worked in order to determihe
whether it would be used. The two test issues
selected will be carried out, and the visual pre-
sentations of alternatives provided, in a manner
that shows the process is indeed transferable--
to other issues and to other regions.

System Test. The 3-5 year System Test would vastly
expand national dissemination begun during the
Design Phase and made more explicit in the Pilot
Test. By that time, visual productions would be-
come a routine output of the project and the rela-
tion to federal, state and local agency programs
established. ACCESS, as a national prototype of
citizen involvement and policymaking for the future
could help provide an example, during the Bicenten-
nial Era, of how citizens and regions of the
United States can solve the problems which confront
them while at the same time, they protect and
strengthen freedom and representative self-govern-
ment.

THE REGIONAL SITUATION ROOM

A major component of the ACCESS process and focus
of its research is the "Regional Situation Room."
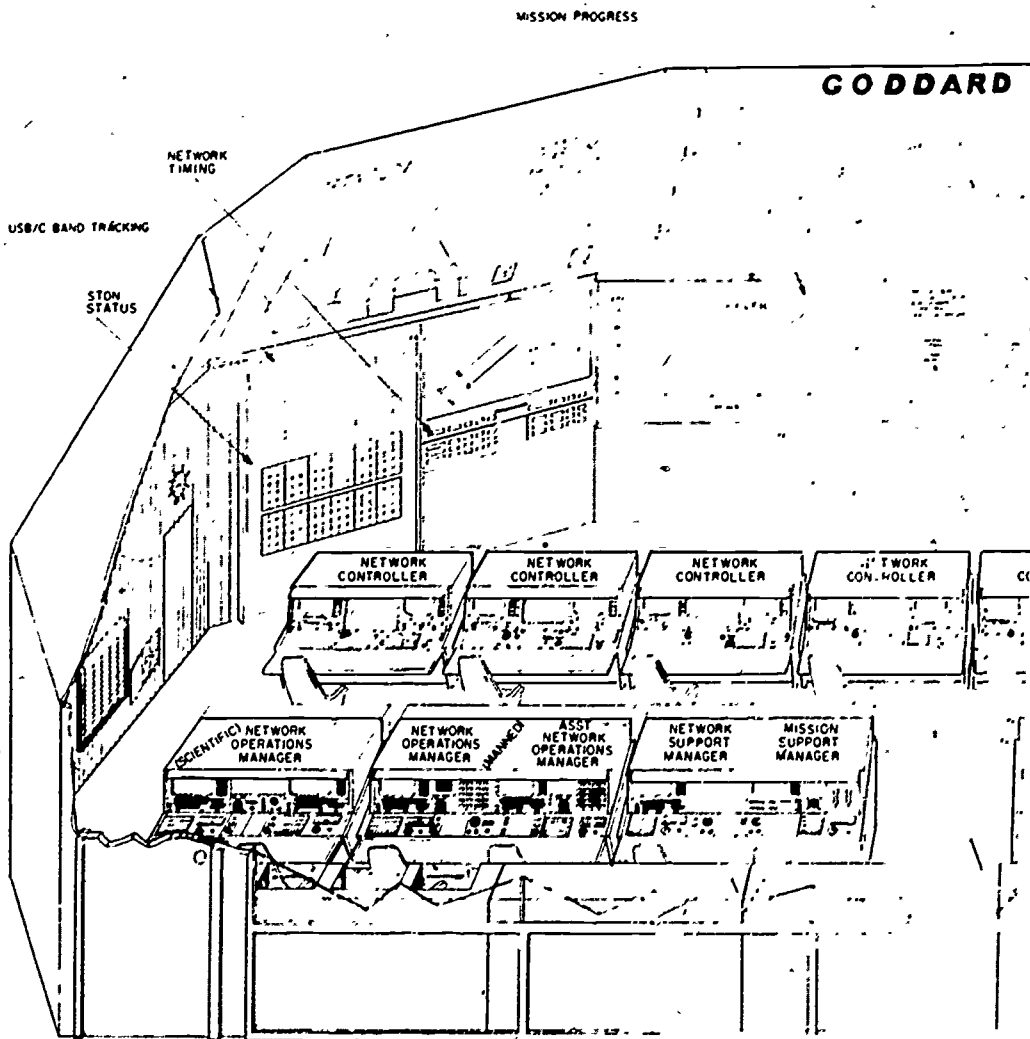
NASA FORERUNNER OF THE REGIONAL SITUATION ROOM Data, missions
and orbits of all NASA unmanned satellites are managed from
the Goddard Space Flight Center, Maryland. The volume and
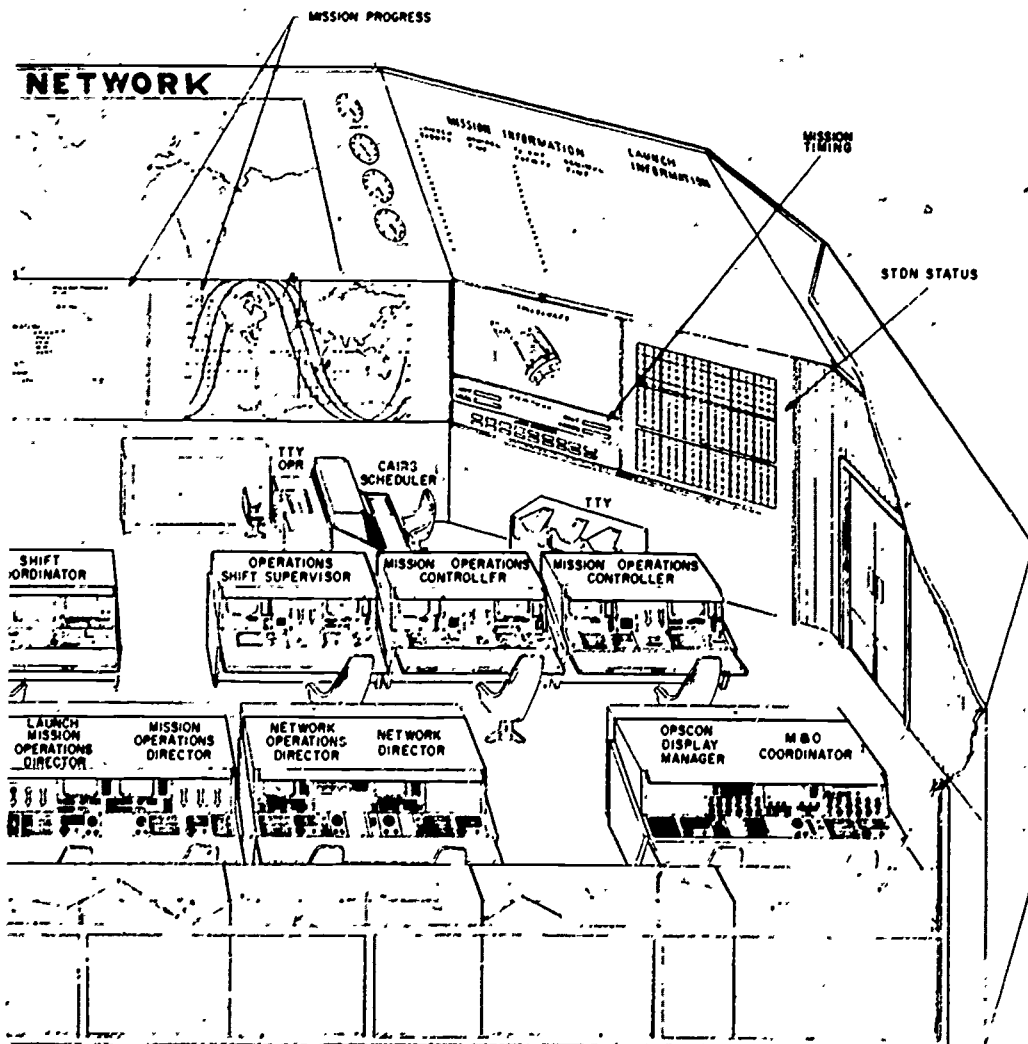
display of information in the NASA Operations Control Center
suggest information-handling capabilities to facilitate
regional policy making.   (drawing by NASA)

The Regional Situation Room is a facility which
provides a new means for science and technology to
make their contribution to public policy making.
It is a direct descendent of and combines elements
of the New England town meeting and NASA's Command
and Control Centers.

Definition   A "Situation Room" is a physical loca-
tion in which problems, trends, options and the
results of policy-related research can be displayed
graphically in a form which decision-makers, includ-
ing the public, can more readily see, comprehend,
interact with and discuss.

Uses   The uses of a Regional Situation Room are:

(a)   to monitor the flow of information relevant
      to ongoing basic planning activities and
      systematically to collect and disseminate
      that information which is particularly
      important to informed public discussions of
      major issues;

(b)   to establish neutral forums for policy
      dialogue and graphic communication of
      complex policy problems and options;

(c)   to synthesize, analyze and communicate prob-
      lems and options, including costs, benefits,
      and risks;

(d)   to make available a means whereby citizens
      and policy-makers can more easily and in-
      tuitively see and understand the critical
      elements and interactions of large complex
      problems and to obtain a sense of the degree
      of ignorance and uncertainty concerning
      such problems;

(e)   to enable individuals who are in potential
      conflict to focus on the problem "out there"
      displayed through the use of various graphic
      techniques;

(f)   to provide a means to develop better percep-
      tions and consensus on problems and options,
      and through the process of dialogue, to
      develop shared values, increased trust and
      agreement about desirable choices.

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(g) to design procedures which will promote broad
public discussion of issues and ensure that
citizens' views will be more frequently and
seriously considered by policymakers;

(h) to strengthen long-range regional planning,
emphasizing the need to take into account
the future consequences of present actions
and policies;

(i) to stimulate the creation of new forms of
planning action where traditional techniques
have proven insufficient to cope with the
special problems and pressures of radical
economic and social change; and

(j) to use and experiment with the vast possibil-
ities of the new information collection,
analysis and display technologies, for ex-
ample, remote sensing, photogrammetry,
computer generated graphics, simulation, and
gaming.

Principles   If Regional Situation Rooms are to
contribute, via policy dialogue, to improved under-
standing and consensus, principles for their use
should include:

- Graphic techniques to display problems, options
  and impacts;

- Dialogue based on reasoned argument and evidence;

- Presentation of a range of alternative future
  long term states of the environment and society;

- Stated impacts of trends, problems, and options
  made as objectively as possible;

- Attempt to state the probability of occurrence
  connected with any impact or trend, and the
  degree of ignorance and uncertainty associated
  with any factual statement;

- Agreement among proponents of varying viewpoints
  on the accuracy of the portrayal of their position;

- Presentations from individuals representing a

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range of points of view. (The Regional Situation Room should not become a propaganda tool for any one group or policy option.)

NASA's operations control centers, and its much simpler but vital conference room installations, come the closest to providing a "Regional Situation Room" prototype. NASA's need for simultaneously managing the "real time" operations of scores of satellites has caused it to develop techniques which suggest how "real time" access to complex data and information bases can be developed.

Making policy for regions is not the same as making decisions in NASA, but there is a similarity to be found in the need to know--a lot-- from many sources, accurately and quickly.

During any given year, regional policy-makers are concerned with reports, budgets and projects that total hundreds of items. Any of these matters may be dropped or picked up several times during the year.

Policy-makers never have enough time for total comprehension of their subject matter. They need whatever facility can be provided to reduce the likelihood of resorting to over-simplification in order to reach any decision at all. The cumulative negative effect of decisions so made is evident in the environment all around us. But there is a limit to the time decision-makers can devote to each issue. And there is a limit to the policy formulation and staff analysis that is possible. Still, the necessity for decision persists.

IV. Design Phase

IV. DESIGN PHASE

Following specific regional commitments made in
June 1973, the ACCESS Project Design Phase was
funded January 15, 1974, by the Office of Explora-
tory Research and Problem Assessment in NSF/RANN
with a grant of $67,500. Ultimately $12,000 in
local contributions and $5,600 of in-kind support
came from the governments and 25 diverse indivi-
duals and institutions of the South Coast Region
of Santa Barbara County, California. Three sub-
sequent grants by NSF have raised NSF support to
a total of $132,300.

This section of the report describes the evolution
of the ACCESS project, its accomplishments and
the lessons to be learned from it to date.

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EVOLUTION OF THE ACCESS PROJECT

ACCESS as a project has been developed in
the South Coast Region in large measure because
of the region's long history of effective
citizen action to protect its environment. While
the concept for the ACCESS process evolved from
the Principal Investigator's professional exper-
ience, it has developed to its present state be-
cause of the South Coast Region. Putting the
concept together with the region's experience has
been the work of the project.

The ACCESS project "Regional Situation Room", fur-
ther, has similarities to Harold Lasswell's "Social
Planetarium" and "Decision Seminars". There is
even possibly a subliminal debt owed to Dr.
Lasswell's earlier experience43/, although the
ACCESS concept did evolve separately. Recognition
of this prior experience led to the selection of
Harold Lasswell as chairman of the ACCESS national
evaluation team in July 1974.

43/Harold D. Lasswell, Professor Emeritus of Law
    and Political Science, Yale University, wrote in
    the 1930's about "decision seminars", (defined
    in Gary Brewer's "Dealing with Complex Social
    Problems: The Potential of the 'Decision
    Seminars'", RAND, 1972, as organized "for context-
    specific, disciplined, integration of diverse
    perspectives and purposes to solve problems".)

ACCESS first became the acronym for the South
Coast Region project in an early 1973 press re-
lease that detailed the concept and the reasons
for selecting the region.44/ Earlier examples of
ways to explain important factors of policy making
with graphics are evident in work of the Principal
Investigator since 1946. Among the most directly
related prior experience were studies for Winthrop
Rockefeller's Arkansas Industrial Development
Commission (1958); Governor Nelson R. Rockefeller's
Office for Regional Development (1964); President John
F. Kennedy's Appalachian Institute Committee
(1964).45/ Also the national consultation on THE NEXT
FIFTY YEARS, the Future Environment of a Democracy
(1966-1970) addressed head-on the potential con-
flict of technology and society and specifically
addressed the possible involvement of the non-profit
institutions in helping to resolve this conflict.46/

The first mention of the South Coast Region as
the site for a national explorative test of a new
process to improve regional policy making was
at the Edison Electric Institute conference in
Santa Barbara, January 27-29, 1972. Fifty invited
persons representing the viewpoints of business,
government, research, foundations, environmental
and other institutions met with 25 utility execu-
tives to critique the Principal Investigator's
paper which suggested the "ACCESS Process".47/

The evolution of the ACCESS concept into a funded
project from that point has already been summarized in

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44/Santa Barbara News Press, February 25, 1973.

45/The Arkansas Encyclopedia, Little Rock, AIDC,
    1958; CHANGE/CHALLENGE/RESPONSE - A 60 Year
    Development Policy for New York State; Albany,
    1964; Report of the Appalachian Institute
    Committee, Washington, EDA, 1964.

46/See Footnote 5, especially Environment and Policy,
    pp. 446-453.

47/See Footnote 3.

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Section II, SUMMARY, p. 27.   Next it may be use-
ful to state more specifically the reasons
for selecting the South Coast Region for the
project, the issues in the region, and ACCESS project
activities during the Design Phase.

CHARACTERISTICS OF THE SOUTH COAST REGION

The South Coast Region of Santa Barbara
County, California is a very small region that is
particularly rich in environmental concerns,
institutional resources and articulated perceptions.
A manageable exploration in this region has
the potential of achievement more quickly and
economically than in the large scale regions in
which the process being studied might ultimately
be applied.

After the oil spills of 1969, experienced South
Coast Region citizens helped bring the nation to
a new awareness of threats to the environment.
They seemed, therefore, to offer an exceptional
opportunity to demonstrate how science and tech-
nology, in the hands of local government and
citizens, can be used to implement further a con-
servation ethic uncommon to the world.   The mini-
region which was proposed as this possibility is an area
10 x 60 miles, from the Ventura County line at
Rincon Point to Point Conception; from the ridge
of the Santa Ynez Mountains out into the Santa
Barbara Channel; centered on the City of Santa
Barbara.   This South Coast Region of 163,000 people,
various incorporations, water districts and school
districts, has certain advantages as the locale
for an exploration to improve regional policy
making:48/

   (1)   The mountains and the sea define the area
         clearly, making it easily understandable
         as a "region";

   (2)   There is a tradition of active, organized,

48/See Footnote 28, pp. 21-25.

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local citizen leadership, probably much more so
than in most other places. (Since this
experimental effort would be in a major way a
communication test, it is an especially critical
asset to have many different organizations
through which to involve people);

(3) The region already has in its focus the basic
national issues of transportation, water,
energy, growth;

(4) The area, the population, the number of pub-
lic jurisdictions, and settlements are large
enough to serve as a regional model, but
not so large as to be unmanageable for a
research-dialogue demonstration;

(5) The region (600 square miles) is all within
one county, (2,700 square miles, with 163,000
of the county's 283,000 population--with a
competent, traditional county government);

(6) Except for water supply and recreation, and
the attention of county supervisors to all
parts of the county, the South Coast Region
may be as close to being a small free-stand-
ing region as could be hoped for study pur-
poses--yet it is threatened by the growth of
Los Angeles;

(7) The famous oil spills in the Santa Barbara
Channel make the Santa Barbara location a
catalyst for:

(a) widespread, quick communication of
experience and innovation successes
of the proposed ACCESS research-dialogue
process;

(b) attracting substantial outside study
funds;

(8) Environmental initiatives and programs of
fundamental concern to the proposed process
include: local water rationing; dispute
over connection to the state aqueduct; the
turn to a "controlled growth" philosophy;
the new Coastal Zone Conservation Commission

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established by state referendum; the Friends
of Mammoth decision (resulting in California's
requirement for environmental impact evalua-
tion of private as well as public develop-
ments); the Serrano decision of 1970 (which
prohibits the support for education per child
to vary by district and has important national
implications for other governmental functions
and taxing); The Brown Act (which is perhaps
the strongest state access to public informa-
tion law in the U.S.):   and continuing attention
to oil drilling in the Channel.

(9)   The region has a regional consciousness not
typical of major metropolitan areas, and it
is without their severe racial strife.   This
should permit more whole-hearted concentration
on the evolution of the analysis/communica-
tion techniques of the ACCESS process.

(10) The region has the additional advantage of
being physically close enough to draw from
several important National Science Founda-
tion environmental research projects and is
in a state which offers a wealth of scientific
and professional experience.

(11) The region has significant computer and
environmental program capacities available
to it through the University of California at
Santa Barbara (UCSB), and in private industry.

(12) The presence of the Center for the Study of
Democratic Institutions has developed a cadre
of interested people who are a unique
resource to this project.

(13)· The region is in a state especially conscious
and concerned with environment and its own
definition of Quality of Life.

(14) Significant coaxial cable television capabili-
ty exists;   62% of the homes in the coastal
area are already connected, the deepest
penetration in the United States and the tenth
largest cable system.   There will be two-way
capability in the region in 1976, and at a

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later stage, the entire county could be brought
in by microwave over the mountain.

(15) Perhaps 80% of the circulation area of the
Pulitzer Prize-winning Santa Barbara News-
Press is within the South Coast Region;

(16). The Continuing Education Division of the
Santa Barbara City College is one of the most
experienced and used in the United States;

(17) The information base is the best it has been
in recent years. Recent revisions have
brought up to date: The County General Plan,
mass transportation proposals, Coastal Zone
Commission plans and regulations, water supply
studies, Santa Barbara City downtown re-
development proposals and Los Padres National
Forest surveys.

It is recognized that exceptionally competent efforts
have been and are being supported by Santa Barbarans
to plan and defend their environment, especially
when Santa Barbara is compared to many other places.
The process proposed is intended to enhance present-
ly organized efforts by providing a more effective
forum and a shared new competence to address and
communicate about regional issues.

REGIONAL ISSUES AND THE ACCESS PROJECT

Complex, controversial issues are the center of
public discourse of the South Coast Region of Santa
Barbara County, for example: environmental pro-
tection; land use; population growth; governmen-
tal structure; allocation of scarce resources
(e.g. water); exploitation of natural resources
(oil); energy; and education. It is obvious that
these are also issues nationwide. But there are
probably few areas of the country where they
are so much in the public mind, or where they
provoke such intense reaction. Historically,
and with particular vitality since the region's
population explosion of the 1960's and the channel
oil spill of 1969, the citizens of the South
Coast have sustained their tradition of interest
in preserving the physical, social, and cultural
characteristics which constitute the Region's
distinct Quality of Life.

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In its Design Phase, the ACCESS project reviewed
five recent public opinion studies of citizen
concern in the region.49/. The natural environ-
ment appears repeatedly in these 1974 studies,
either as an explicit issue or as a component of
other issues such as population growth.

Livingston and Blayney, planning consultants for
the revision of the County Comprehensive Plan,
adopted a procedure for posing a series of nine-
teen questions to Citizens Advisory Committees in
various communities of the region. Concern for
the environment was pervasive even when economic
factors were cited as possible trade-offs. The
top two issues in an informal Junior League study
were 1) land use planning and the growth issue,
and 2) water.

Radio Station KIST, in reapplying to the FCC for
license renewal, reviewed community interests and
needs. The community leaders sampled did not
explicitly raise preservation and protection of
the physical environment. KIST's broader random
sample of the area produced as major issues "the
City Council and its no-growth attitude" and
"general people problems." Opposition to no-growth
policies was reported to be widespread. 'This
survey also cited the need to protect the environ-
ment, especially from pollution risks incurred in
off-shore oil drilling.

Also in 1974, random telephone interviews con-
centrating on attitudes towards growth, were
methodically conducted and tabulated by a group
of local citizens (The Santa Barbara Task Force)
commissioned by the City Council "to provide an
analytic base to help determine an optimum level
of population for the city". Overwhelming oppo-
sition to increased population was reported and
the city has since set a population ceiling of
85,000. This is the population level for 1990
selected by Livingston and Blayney. (The present

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49/Wormhoudt, Daniel. "Issues and Access," ACCESS
   Design Phase Documentation, Volume B, from which
   this subsection is edited.

city population is 74,000.)

A series of meetings conducted by the ACCESS
project throughout the region early in its Design
Phase took up the issues of "Growth" and the
"Quality of Life". By means of a polling mini-computer,
sessions moderated by its inventor Thomas Sheridan,
MIT, stimulated and recorded spontaneous, open
dialogue. With regard to the environment, the pre-
dominant concern of all groups was to slow popula-
tion growth. Growth was closely linked to Quality
of Life which was defined by each group in differ-
ent terms, but overall, economic security, natural
environment, aesthetic and cultural facilities
and responsive government were most prominent. A
growing number of special problems were identified:
the need for controlled development; better land
use planning; more public transportation; adequate
waste supply; reduced air, water and land pollution;
new employment opportunities; better education for
minorities; and simpler, more responsive government.

If the South Coast Region has a preeminent concern
it is "Quality of Life". "Quality of Life" is a
phrase which appears repeatedly in the South Coast
Region press, in group discussions, and private
conversations. Though the phrase surely has no
single common meaning, it seems always to include
protection of the natural environment and it serves
as a standard against which the importance of
other issues is measured.

Among the citizen participants in the ACCESS pro-
ject itself, the problem of determining what
issues are most significant in the region and what
role or functions ACCESS might perform in relation
to them became a growing concern. ACCESS Members,
organized in six committees, began to define
and establish the ACCESS pilot process.
In order to facilitate the identification of
specific issues which ACCESS might address in the
one year Pilot Test, two meetings with a selected
group from each ACCESS citizen study group were
scheduled (August 11 and August 13, 1974). The
following questions provided the agenda:

First Meeting

A. What are the most pressing issues facing the

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South Coast Region?

B.   Which of the issues identified in A. are most
feasible for ACCESS to concentrate on?

Second Meeting

C.   What form of organization must ACCESS assume,
and what sort of functions should it perform,
in order to deal with the priority issues
identified in the first meeting?

D.   What is the most important item or set of items
for an immediately operational agenda, given
the goals and organizational functions defined
in C.?

E.   What actions must be taken now to implement the
agenda developed in response to D.? Who must
do what, and in what way, to accomplish the
immediate objectives before ACCESS?

The design of the questions and the procedures for
discussing them was intended to encourage a deduc-
tive process which would progressively narrow and
sharpen the group's focus and produce as an outcome
clarity and agreement about the particular direc-
tion(s) ACCESS should take.

The five highest priority issues thus identified
were:

(1)   UNIQUE AND SCARCE RESOURCES - Identify the
unique resources of the region and produce
consensus about them; use water and other
scarce resources more effectively;

(2)   LAND USE - Control land use in the region
more closely;

(3)   HUMAN ECOLOGY - develop a consumer educa-
tion process/organization and a political
education process;

(4)   COMPREHENSIVE PLANNING - devise a more
comprehensive, integrated and responsive
planning process in the region;

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(5)   TRANSPORTATION - examine the possibility
       of a regional multi-modal transportation
       system.

By the end of the first meeting, the five priority
issues facing the South Coast had been selected
and a broad consensus reached about which of them
might most feasibly and productively be addressed
by ACCESS. The consensus appeared to be that
ACCESS should undertake as its demonstration task
a set of specific, limited issues. The need for
specific projects was justified on the grounds
that ACCESS has limited resources, that it needs
to create   presentations or reports quickly in
order to promote increased and wider citizen
awareness and participation, and that it must do,
especially in its first efforts, a highly skillful
and competent job. (This represented complete
concurrence with the national evaluation in late
July.)

During the course of the second meeting, six
functions for ACCESS were chosen:

(1)   INFORMATION CLEARING HOUSE - It was widely
       agreed that numerous sources of data and.
       information relevant to the issues confront-
       ing the South Coast Region already exist
       or are currently being collected by other
       organizations. ACCESS should, as one parti-
       cipant phrased it, serve as an "information
       clearing house".

(2)   INFORMATION "DRAMATIZATION" - It was empha-
       sized that ACCESS should be exciting, that
       information and its analysis should be
       "dramatized", relying heavily on the electron-
       ic media (especially TV).

(3)   PUBLIC FORUM - It was proposed that ACCESS
       should be open to the broadest possible
       public as a regional forum in which anyone
       may participate, subject only to certain
       minimal procedural rules. It was recognized
       that, at least at first, ACCESS will have to
       promote itself actively within minority
       communities and groups in order to encourage
       their participation.

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(4) CONSEQUENCE TRACING - It was decided that while ACCESS should not itself attempt to be a policy-making body, neither should it be merely a passive resource, a library. It should instead pose and project answers to the question "What if...?" in a variety of problem areas.

(5) EDUCATION - ACCESS was seen as an educational tool or vehicle in two distinct senses: (a) it should provide the people of the region with the orientation and information they need to understand and form intelligent opinions about the issues confronting the region; (b) it should familiarize people with the new and powerful technologies of information collection, processing and graphic display by encouraging people to use them (e.g. interactive computer terminals).

(6) PROCESS - ACCESS is a process, rather than a static structure, and it should, therefore, include procedures for continuous monitoring and evaluation.

After review by ACCESS Members, it was decided to leave the details of an operational agenda (Questions D and E) to the ACCESS staff to propose.

ACTIVITIES OF THE ACCESS PROJECT

The original concept of the ACCESS Design Phase was to begin in September 1973, three to four months after the diverse group of South Coast Region leadership institutions had indicated their interest and support of the concept. In nine months, with local citizen involvement, the design of the ACCESS process was to have been completed. A major discipline to that design was to cost and detail a three to five year research demonstration.

Beginning in September, the ACCESS project, built on the initial show of enthusiasm, was to have fitted into people's normal calendar of activities which coincide with the school year.

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ACCESS DESIGN PHASE 1974 HIGHLIGHTS

January 14	Project announced in Santa Barbara
February 1-9	Operations and staff selection begin in Santa Barbara
April 3	ACCESS dialogue at Center for the Study of Democratic Institutions, Santa Barbara
May 2	ACCESS first citizen organization meeting in Lugo Adobe; six study groups established
May 15	Consultants commissioned
June 1	ACCESS Public Workshop - "New Tools for Managing Change"
June 1-7	ACCESS first videocassette produced
June 30-July 1	NSF staff site visit
July 23	Santa Barbara City Council withdraws endorsement, but not financial support
July 26, 27	Project evaluation by national panel
August 11-21	ACCESS selects range of issues and methods for one year Pilot Test
September 17	ACCESS Advisory Board formed
September 28	Conference with planning specialists from the region
October 22	First meeting of ACCESS Advisory Board; executive committee announced
December 2, 3, 9	ACCESS Design Phase Report to South Coast Region, presentation and television production

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January to May 1974

Regional funds were not added by the National
Science Foundation, until January 14, 1974. The
Principal Investigator did not move to Santa Barbara,
until February. Energy was immediately directed to
efforts that ultimately did revive interest and
regain visability in the region, but the delay in
funding cost the project four valuable months.
It was not until May that the ad hoc citizens group
that had kept the project alive was in a position
to extensively broaden citizen involvement. Three
local citizens were designated as project coordina-
tors. On May 2, over 90 people selected their
places on the six study committees as defined by
the Principal Investigator. That membership matched
project sponsors and endorsers in its diversity,
and the project was launched.

May to August, 1974

During the next three months, through July, ACCESS
consultants and staff prepared "resource papers"
in each of the six study areas, and organized and
supported their review by the study committees.
The study areas as originally defined for citizens
on "sigh up sheets" are given below:

(1). Data and Information. Identify regional
data and information sources, where located,
how collected, how maintained; also, recom-
mend detail, kind, scale, type, frequency,
source, maintenance of data and information
desired.

(2) Research Resources. A survey of regional
human resources and specialized equipment.
This is to include especially faculty and
students of UCSB; commercial research firms,
such as GE Tempo, General Research Corp.;
governmental agencies; non-profit organiza-
tions; and individual professionals and
scientists. Computers and communication
skills are to be included.

(3) Relation to General Planning. Over the next
several years from $700,000 to $1,000,000

will be expended on general planning in the
region. This includes plans by the Coastal
Zone Commission, the County, the City, and
the Redevelopment Authority of Santa Barbara.
A common data base, alternative approaches
and coordination of these plans will be ex-
amined, as well as those undertaken by special-
ized governmental functions, utilities, etc.

(4) Organization. Alternative ways to organize
the proposed process need to be analyzed.
The representation of various viewpoints,
linkages to existing institutions (especially
public and citizen policy makers), use of
communication media, sources of funding, etc.
will be addressed. Whatever legal instruments
are necessary will be drafted.

(5) Cable and Broadcast Television. The present
cable system and local broadcast television
systems need to be assessed in relation to
the proposed pilot process. The potential,
cost and phasing of limited as well as
regional two-way television needs to be
estimated. This study is to include feasi-
bility and cost estimates performed by con-
sultants.

(6) Computer Systems. A particular interest of
this project is to attempt to learn the ex-
tent to which computer assisted graphics,
drawing on coded, ordered data and informa-
tion bases, can be applied to regional re-
search and policy making. This committee will
take up time-sharing, the ARPA network, com-
puter equipment accessible in the region.

These early statements of the tasks involved in
defining the ACCESS process were modified to a
degree during the summer's work. After the July
26-27 evaluation, specifications and detailed
estimates of the 3-5 year Region wide System Test
were dropped altogether. Instead, a one year Pilot
Test was specified.

During June 1974 a practical workshop on the
experience of geo-based information systems was
held, and the first videocassette produced. By

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this time it was clear that the project, out of phase with the community activities, and behind schedule as it was, was in need of additional funding. The NSF staff site visit in late June verified that need and the potential of the project.

It had also become clear that simply showing examples of the sort of visual communications which the project intended to use was not convincing of itself. The study groups all concluded that specific regional issues had to be taken up by the process. That was also the advice of the evaluators in Santa Barbara on July 27, underscored by the withdrawal of City Council support (but not its funds) earlier that same week. ACCESS project membership was of an importance, combined with diversity, enthusiasm, and technical skill that apparently threatened a vocal few. But they were well-connected in the City Council and the project was vulnerable. It had been a year since the City Council's commitment of $2,000 and ACCESS had not yet delivered.

August - November 1974

Design of the 3-5 year research test was dropped. The review work of the study committees turned instead to selecting specific regional issues which could be used to demonstrate the utility of the ACCESS process, with its stress on visual communication to explore policy alternatives. Interested members for each of the six study committees agreed to take part in two special meetings for this purpose, as was reported in the previous sub-section.

Out of this series of meetings, expanded to three, the ACCESS concept solidified and an Advisory Board was established (from which an Executive Committee was formed October 22). The rest of the work of the project was to glean from the resource papers and their study reviews, the eight regional policy statements. For $2,000. the county contracted to support the development of these statements. They were also promised to all regional sponsors. Drafts of the Report

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to the South Coast Region, which incorporated both
the policy statements and the proposal for the one
year Pilot Test, were made available for review
in October. Subsequently, a public service tele-
vision show was produced by KEYT, rebroadcast two
times on cable television (Channel 28) featuring
ACCESS members who also made the formal presenta-
tions to the County Board of Supervisors and the
Santa Barbara City Council. Fully aware of the
national prototype character of the ACCESS project,
the need to demonstrate it locally, and to com-
plete the design of the ACCESS process with test
issues, no local funds were requested of local
governing bodies for the pending one year Pilot
Test.

Cooperation with the ACCESS project's proposed
one year Pilot Test was assured by almost all of
its original sponsors, including the county and
both cities. However, the Santa Barbara City
Council, which in July 1973 had voted 4-1 to with-
draw its endorsement of the ACCESS proposal, first
voted to cooperate with the one year Pilot Test
(4-3); then, the following week it reconvened and
split 3-3. The legal result was "no position".

November 1974 - August 1975

Project funds were expended October 31 but ACCESS
members kept up monthly meetings, during which
they decided to work at defining the representation
and organization of a legally chartered non-profit
ACCESS corporation. At the February meeting, as
part of that effort, the wording of the statement of
purpose for ACCESS was agreed upon. (It is given
on page 3.) A newsletter and speakers bureau
were begun at this same meeting. -

From January to August 1975, the Principal Investiga-
tor divided his time between Washington and Santa
Barbara. As had been agreed with NSF, the interest
of federal agencies in the ACCESS concept and
possible sharing in the support of the one year
Pilot Test was to be explored. Presentations
were made to eight federal agencies, followed by
numerous meetings. The results have been gratify-
ing. As of August 1975, offices of four federal

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agencies had addressed themselves to the proposi-
tion of funding the one year Pilot Test (Commerce,
NASA, Agriculture, and the Environmental Protec-
tion Agency) and four offices of the National
Science Foundation were considering the project.

ACCOMPLISHMENTS OF THE DESIGN PHASE

The purpose of the ACCESS project, as stated
in the approved grant application for the
Design Phase was:

  to define the ACCESS pilot process

in such a way as to:

  (1) provide a sound basis for exploratory
       research;

  (2) state the significance of the national
       learning experiment which the pilot process
       would provide;

  (3) provide useful policy reports to the
       South Coast Region;

  (4) develop enthusiasm, support and commit-
       ment to the pilot process in the South
       Coast Region;

  (5) develop national and local sources of
       funding;

  (6) develop interest in and evaluation of
       the proposed pilot process.50/

Accomplishments of the ACCESS project in its
Design Phase are covered in detail in the ACCESS
publication and visual productions listed in the
APPENDIX. Since they are also summarized in

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50/ See Footnote 28, p. 25.

Section II, SUMMARY, pp. 29-32, that listing will
not be repeated here. This subsection of the
report will discuss the six study topics, the
ACCESS Regional Situation Room and efforts to
assure that the work of the Design Phase is
available and used.

Six Study Topics

ACCESS volunteer work, estimated at 10,000 hours
for the Design Phase, centered around the investi-
gation of six topic areas. Study committees of
10-20 persons were organized for each topic area.
Staff and commissioned consultants produced
resource papers for them to review and in other
ways supported their participation.

Data and Information. The primary effort was to
gain familiarity with regional information sources:
where information exists and how that information
can be obtained on economic, physical, social,
cultural, and other aspects of the South Coast
Region. Dean Robert M. Hayes, School of Library
Science at UCLA, provided an analysis of basic
information needs for regional planning and policy-
making, as well as guidelines for data referencing
and organization.

Six UCSB students conducted and reported on a pre-
liminary survey of data sources; the students
verified the difficulty of locating and arranging
for access to information sources. Another survey
summarized library resources in and available
to the region. A workshop on strategies for re-
gional information management brought to Santa
Barbara innovative project managers from Des
Moines, San Diego and Vancouver, B.C.

Research Resources. These resources include 1)
human resources--the expertise associated with
personal skills, 2) meeting places, 3) advanced
communication technology facilities, and 4) re-
search organizations. An early survey inventoried
meeting places throughout the region that could
be used for ACCESS and other purposes. The
staff made efforts to begin identification
of individuals with various kinds of research

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interests, capabilities and experience potentially
relevant to ACCESS. Additional surveys were begun
of research organizations and specialized facili-
ties, especially those concerned with data process-
ing and communications media.

Relationship to General Plan.   The ACCESS experi-
ment is an attempt to meet new and pressing
demands.   It does not compete with existing
planning institutions in the South Coast Region, but
is an additional facility for them to make use
of.   A review of planning institutions and efforts
in the region was compiled. (71pps.)   This
essential information was previously unavailable
in the region.   Like other ACCESS resource papers, this
"in work" paper may become of considerable value
to the public as a reference if it is continuously
corrected, supplemented, revised and updated.

ACCESS initiated contacts with planners, private
groups and citizens in the South Coast Region to
explore possible ways in which ACCESS might
facilitate communication between planners, decision-
makers and the public of the region.   The initial
period of operation confirmed the utility of the
Regional Situation Room, to which the Lugo Adobe
has been adapted.

Organization.   Just how access to information,
analysis, expertise and persons of the region to
each other could be organized and funded was
studied by ACCESS members after the papers and
discussions of the other five groups had made
clear that a unique process would indeed be
necessary. An organization was needed to test and
validate the ACCESS process that was:

   (1) capable of handling information,

   (2) open to and controlled by a balance of
        groups and interests,

   (3) able to receive grants and other types of
        support.

These requirements were reasons for the origina-
tion of ACCESS and for its diverse sponsorship, but

now required more specification and the evolution
to legal status. A major concern of the ACCESS
concept is broad representation for all ages,
income, and ethnic groups. Separate funding has
been and is being sought to assure the integrity
of the effort to reach and hold the interest of
hard-to-reach "publics".

Broadcast and Cable TV. Accessibility to the
ACCESS process rests on graphic display of infor-
mation. It is believed that skillful use of
television can induce wider participation in and
readier comprehension of policy issues and
choices in a region: Television is an important
part of the design of the ACCESS process. Infor-
mation to be assessed and used by the system
will be formatted to be compatible with color
TV.

The project has closely followed local developments
concerning cable television and developments such as
the new Learning Resources Center at UC Santa Barbara.
The consultants, Ross Telecommunications Engineer-
ing Corporation and Arthur Klimack, produced com-
prehensive descriptions of the current cable sys-
tem, its specifications for two-way capability
and the basic compatibility of components required
for the proposed system. A small film library was
assembled including examples of computer-assisted
graphic presentations. Three videocassette
programs and an overhead slide presentation were
produced which explained the ACCESS process and
its transferability. (See APPENDIX for the list-
ing of visual productions.)

Computer Systems and Graphics. To store, retrieve,
handle, compare, revise and communicate information
for something as large as a region in this era
of rapid social change and complexity requires
electronic equipment. Hence, a substantial effort
of the Design Phase has concentrated on explor-
ing the requirements for effective use of
computers in the ACCESS process. A survey which
was conducted of computer facilities in the
region was extensive and detailed enough to be-
come a resource in itself. Clearly, there is
substantial equipment and experienced talent in
the region.

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Regional Situation Room

At the core of the ACCESS project; and one of its major achievements is its "Regional Situation Room". The unique identity of the project, and its major facility was established when the ACCESS project leased and refurbished the historic Lugo Adobe, Studio 4, in Meridan Studios, at 114 East De La Guerra Street, one block from the Presidio and a half block from City Hall. The wooden griffin sign that hangs over the sidewalk at the entrance to Meridian Studios was adopted as the symbol of ACCESS. (In Greek mythology, the griffin protected the treasures of Apollo, God of Reason. ACCESS protects the treasures of the South Coast Region.)

The one story, one room Lugo Adobe with its brick patio in back, adjoining office and facilities, has served as the meeting place for ACCESS since May 2, 1974. The adobe has connection with history as the house for one of the soldiers of Santa Barbara's Presidio, over 160 years ago, and as the office in which Pearl Chase began her work for Santa Barbara over 50 years ago. It is marked as an historic landmark of Santa Barbara on many maps.

The "Regional Situation Room" in the Lugo Adobe, is a 19' x 34', 12 foot high, raftered room with a skylight. The room has been fitted with ceiling track lights; tack boards for maps and project information line the long walls. Four major tapestries (4 1/2' x 10 1/2') by artist Norman LaLiberté, symbolizing "art", "spirit", "science" and "technology" are hung on tracks at the end opposite the fireplace. They slide to one side to provide a whole wall for graphic images.

Two 35mm slide projectors, a 16mm movie projector, a high fidelity sound system and a small film library are housed in a projection booth fitted onto the fireplace wall, outside a dutch door with a glass-windowed top. A 6' x 18' white sectional table 20" high is in the center of the room surrounded by 22 wicker chairs. There are 49 chairs in all in the room, including those against the walls. The outside patio has space

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THE HISTORIC LUGO ADOBE, home of the ACCESS project;
114 East De la Guerra St., Santa Barbara, California 93101.

THE REGIONAL SITUATION ROOM INSIDE THE LUGO ADOBE,
equipped for visualizing policy dialogues. (photographs
by Steve Malone)

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for another 100.

The conference table was designed for a 13' x 4'
(2,000' scale) topographic map or model of the
region. It can be disassembled into six 6' x 3'
tables. At this stage the Regional Situation Room
is used by other groups as well as ACCESS for their
meetings. There is no sense of technology in the
room and that is deliberate. It is first of all
a pleasant space in which to meet and discuss.
There are two flip chart easels, an overhead
projector, and string from which newsprint sheets are
hung, which provide means to visual dialogue now.

In the Pilot Test, the intention is to further
equip the Regional Situation Room with: an aerial
photograph of the region developed on the surface
of the topographic relief model to be made of the
region, an Advent Video projector and 6' screen,
a 19" color television monitor, a videocassette
player and a program locator, a computerized
electronic polling system and a computer terminal.
The room is to be connected to one of the "head
ends" of Santa Barbara Cable Television and to the
UCSB computer. The result is the second stage in
the evolution of the Regional Situation Room,
enhanced for ACCESS dialogues on regional policy
issues. These dialogues could also be video-
taped or carried "live" on television. The ACCESS
project will make this facility available to the
community.

During the one year Pilot Test, only the simulation
of a Regional Situation Room is practical with such
minimal equipment. Videocassettes will be used
with the Advent projector to display 6' images.
Graphic images will be interactive at this stage
in the sense that the visualizations of each
alternative for the test issues stored in video-
cassettes can be called up for immediate projec-
tion by means of the program locator. Available
computerized data coupled to the Advent projector
can also be called up and displayed.

The ACCESS project will make use of all means of
visual and oral communication, but will design
its information storage and processing for com-
puter-handling compatible with television display

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at a rate that is practical for the users of the
process and within the financial capacity of the
project. The basic concept is to devise a test
project that provides the opportunity to study
visual means of communication as used to facilitate
dialogue; understanding of information concerning
regional policy issues, options and impacts, and
responsible citizen contribution to regional
policy making.

Utilization

Urban information systems have been the subject
of over $25 million in reserach and development by
the federal government in the USAC program alone.51/
Those programs have investigated the development
and computerizing of information bases, primarily
to meet operational requirements of local govern-
ment. The Resource and Land Investigation program of
the Interior Department, NASA's exploration into
remote-sensed data, Oak Ridge National Laboracories'
study of a universal grid system, and the Integrated
Regional Environmental Management project in San
Diego funded by the Ford Foundation are some infor-
mation handling efforts in addition to USAC. This
listing makes no attempt to account for the much
larger, sustained programs in information handling
financed by DOD, NIH, NSF and others. Most of these
programs have concentrated on information manage-
ment systems per se.

The ACCESS project in its Design Phase has attempted
to define how to study the communication of infor-
mation from the point of view of regional policymakers
as users of information. This is a perspective
which has specific demands to make on technology and
programs for information handling.52/ It is this
critical "point of sale," "interface," "perception" of
information that concerns the ACCESS project. Part of
the ACCESS thesis is that potential users should

51/(USAC) Urban Information System Inter-Agency
   Committee; ten federal agencies led by HUD.

52/See footnote 29.

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themselves have more of a role in designing the
information handling process than they have been
permitted to date. This is consistent with the
mandate in law that came with the National
Environmental Policy Act (NEPA) in 1969 concerning
environmental impact statements and the sufficient
and meaningful involvement of citizens in
policy making concerning the environment.

In order to explain the ACCESS concept and to report
on progress already made during the Design Phase,
five briefings were held in 1974 at NSF in Wash-
ington to which federal agency and NSF department
persons were invited.

Scores of presentations, official and unofficial,
were made in the South Coast Region and in Cali-
fornia. The project has been included in numerous
published accounts concerning new approaches to
future regional policy making, including the
Conservation Foundation Newsletter of June
1975.

"ACCESS Q: Who Needs It?" a half hour television
show produced by KEYT in Santa Barbara, was
broadcast three times in December 1974. In
Detroit a half hour "Common Ground" television
show on Channel 56 clearly revealed that the
graphic emphasis of the ACCESS process was
quickly grasped and approved.

Presentations were made by the Principal Investiga-
tor and others to the American Association for the
Advancement of Science (AAAS) in 1974 and 1975, to
the Institute of Electronic and Electrical Engineers
(IEEE) in 1975 and to the World Future Society in
June 1975. The Computer Graphics and Spatial
Analysis Laboratory at Harvard University requested
a print of the ACCESS-compiled film showing
examples of computer assisted graphics which the
Bureau of Social Science Research included in one
of its graphic social indicators workshops.

Most recently, Pacific Gas and Electric Company
arranged for the Principal Investigator to
make three presentations: to the company, a
San Francisco Bay area group, and to public and

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private utility government affairs officers of the
ten western states.

From January to August, 1975, the Principal Inves-
tigator spent two weeks of each month in Washington.
The purpose was to explain the ACCESS concept, its
next step, and to seek support. Presentations were
made and separate meetings held with the offices of
eight federal line agencies, the National Science
Foundation, and national non-profit organizations such
as the National Urban Coalition, The Conservation
Foundation and Resources for the Future. On
March 3, 1975 a meeting for federal agencies was
sponsored by James Scheuer (D, N.Y.) and Robert
Lagomarsino (R, Calif.) in a hearing room of the
House Science and Technology Committee.

The total result has been a strong confirmation of
the national significance of ACCESS project
objectives. It has been recognized that to get
important information into policy makers' heads and to
make citizen involvement sufficient and more
meaningful requires research such as that attempted
by the ACCESS project.

LESSONS LEARNED – RECONNAISSANCE PHASE

If "the beginning is half the whole" as Pythagoras said, certainly it is important to document the beginning effects of something as sensitive as designing a new process for regional decision making. This is especially so if the process is intended and funded as a __national__ learning experience. A major factor and expense of the ACCESS project has been the "self conscious" nature of its work, its peer reviews, evaluations, and the pains taken to document each step of the way. There are 500 pages of documentation plus basic reports. (See APPENDIX listing of ACCESS reports.)

Because of the way it has been funded (see p. 10-11) there have really been __two__ "beginnings" for the ACCESS project (and a third to come, if the Pilot Test is funded). They will be reported on separately here as lessons learned in the Reconaissance Phase (February to July 1973) and in the Design Phase (January to November 1974). The intention is to summarize what was learned so that other regions with similar concerns about the future Quality of Life and improving regional policy making can benefit from the ACCESS expereince.

Following the experience of the Reconaissance Phase, three fundamental principles for establishing a regional ACCESS institution and process were stated:

(1) Sponsorship of the initiating action must clearly gain nothing material for the sponsors, which probably means funding from outside the region;

(2) Efforts to explain and organize __must be__, __and be accepted to be__, independent of any public or private institution or any sector of society in the region concerned;

(3) Open discussion, participation and support should be sought from all sectors of the region from the very outset, while avoiding involvement in any political contests.

Other still valid rules for initiating an ACCESS-

like project, derived at the time of the Recon-
naissance Phase, are as follows:53/

(a) Use a qualified person with no biasing ties
or affiliations within the region--to be
absolutely safe, use someone from outside
the region;

(b) The initial effort to organize and explain
should be adequately funded through an in-
dependent, respected source;

(c) Establish office space, answering service,
etc. and publicize it so that all are free
to reach the investigator;

(.d) Spend time with both TV and newspapers to
establish the purpose of the effort and the
character of its sponsorship;

(e) Provide printed explanations from the first
visit on, keep updated, reprint newspaper
articles;

(f) Plan two to three meetings, if possible, with
each individual from whom support is sought--
the first time or so they will be sizing you
up, not listening very closely to your words;

(g) Avoid technical jargon, be specific (use visuals);

(h) Meet with all types of institutions and indi-
viduals;

(i) Refer to computers and two-way television in
ways that make clear you understand their
limitations as well as their value, especial-
ly what might be practical initial applica-
tions versus their ultimate utility;

53/Rules (x), (y), and (z) apply if the investiga-
tor/organizer is from outside the region. Rule
(w) should be read as the getting acquainted
stage; the organization, funding, staffing,
demonstration stage leading to an operating full-
service ACCESS-like project will take 2-3 years.

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(j) Seek financial as well as verbal support
for the design phase of the project; finan-
cial support even if minimal requires
policy board clearance--that takes longer
but it means more;

(k) Make clear that financial support of the
design phase brings with it no special advan-
tage--it is a harder way to win support but
it verifies the independence of the proposed
process;

(l) Recognize and adapt to local customs, pace,
priorities--it is offensive not to recognize
the basics of the Quality of Life to be
enhanced;

(m) Avoid statements that matching local funds
are not necessary to the next stage in estab-
lishing a process--maybe the sponsor doesn't
need funds but the proposed process will
need broad community support to establish
its credibility;

(n) No one individual, institution or sector of
the community which contributes regional
matching funds should be allowed a dominat-
ing proportion;

(o) Sponsor and regional matching funds for the
design phase should be received and managed
through an institution accepted in the
region as unbiased and above any tampering;

(p) In beginning work in the region, seek first
to meet with local leadership;

(q) Begin early to identify organizations and
people who might serve as resources to the
process itself, especially in universities
and research companies;

(r) Avoid taking positions on current projects--
there can be more strong feelings on all sides
of regional issues than one can appreciate
instantly;

(s) Be prepared to explain the concept of the

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link between current decisions and long-
range consequences;

(t) If possible, the original organizing efforts
should be funded well enough to take advan-
tage of and demonstrate the capabilities of
graphics;

(u) Meet in small groups, seek two to three hours
for give-and-take discussions, once there have
been several short exploratory sessions;

(v) Seek out the regional issues of greatest
concern;

(w) Count on a minimum of six months to a year
for the initial organizing effort;

(x) Figure on three trips to the region, the first
one from three to four weeks, the second from
two to three weeks, and the final one from
six to eight weeks;

(y) Establish a diverse ad hoc liaison group to
cover inquiries between visits;

(z) Time trips to avoid major local events,
especially political contests.

Lessons learned from organizing the ACCESS
project are tantamount to instructions on how to
adapt and initiate the ACCESS concept in other
regions. It is useful to know, therefore, that the
lessons learned from the Reconaissance Phase were
verified by the experiences of the Design Phase.
It may also be especially important to say some-
thing here about the three basic rules stated at
the conclusion of the Reconaissance Phase, which
stressed the independent character of the organiz-
ing effort and how it might be established.

The fundamental liability of an existing organiza-
tion which attempts to develop an ACCESS-like
regional policy making process is that such an in-
stitution has an image, priorities, functions

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and relationships which automatically take
precedence. This can not help but threaten the
credibility and the scope required of an ACCESS-
like process.

Still, the initiative for adapting and organizing
an ACCESS-like regional policy process has to
become based in a region. This can be accomplished
without prejudice if the initiating institution
or individual, after drawing attention to the
purpose of the process, proceeds to help establish
an ad-hoc organization that is truly representative
of the region and not dominated in any way by any
one existing public or private sector of the
region.

Establishment of the ACCESS project in the South
Coast Region is an example of that. It was
assumed by the Principal Investigator that this
environment-conscious area would have enough
interest in the ACCESS concept to foster its
establishment. It did, and a broadly   represen-
tative ad hoc group was organized. Twenty-five
individuals and institutions contributed $12,000,
limited to a maximum of $2,000 from any one sponsor.
Fifteen other institutions endorsed ACCESS or provided
"in-kind" support. Most of these supporters still
sustain their interest in the project, and the
diverse character of the ACCESS study committee
membership, as the ACCESS project evolved in 1974,
was further validation of its scope and indepen-
dent integrity in the region.

As a national exploration, the ACCESS project is
not only concerned with the design of a process.
It is just as seriously concerned--assuming the con-
cept is valid--with learning how to initiate
ACCESS-like processes in other regions. It was
assumed from the outset that extraordinary expenses
would be required to conduct such a ground break-
ing study. Being unproven, it could not be expect-
ed that there would be adequate local funding for
this. Major funding was expected to come from
outside the region. Furthermore, the nature
of the exploration which was attempted severely limited
possible sources of funding outside the region.
It took the "Advance Scout" mission of the Office
of Exploratory Research and Problem Assessment in the

ACCESS member Jeffrey Holyrod, UCSB, Architect-Designer, College of Creative Studies, takes a note from Donald A. Schon, MIT, Ford Professor of Urban Studies and Education.

THE NATIONAL EVALUATION, JULY 26-27, 1974 Experts from across the nation gather in Santa Barbara to critique the ACCESS project. Roman Mrozinski, National Academy of Engineers, Committee on Telecommunications, listens to an explanation by Garland Green of the American Revolution Bicentennial Administration, Horizon Program. (photograph by Leinie Nagel)

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RANN (Research Applied to National Needs) program
of the National Science Foundation to recognize and
fund the initiation of the ACCESS project.

LESSONS LEARNED - DESIGN PHASE

At the conclusion of its one-year Design Phase,
the ACCESS project had learned the following
lessons:

Integrity

There must be real and recognized independence of
process organizers from local direction by any
special interest group, individual, political
party or ideology. Rarely would any existing
organization be found which is as broadly represen-
tative, free from manipulation, and of the
technical scope deemed essential to the integrity
of the ACCESS process.

With that recognized independence can come the
realization that the process cannot be "taken over"
by any one group. This fact may convert those who feel
especially threatened into active opponents. It
may cause other established institutions to be
apathetic, to wait for the initial effort to die
out so that they can assume command of whatever
portion of the process fits their own established
agenda.

(All project funds for ACCESS were made to and
managed through the American Society of Landscape
Architects Foundation. This "buffered" the
project from any pressure from sponsors. Further,
no special favors from any quarter were accepted
by the Principal Investigator, who himself was a
stranger to the region. In addition, he was
vouched for by the respected local leader, Pearl
Chase. The liabilities of being a stranger in
town would have been overwhelming without staunch
local support.)

Continuity

To begin the organization of the process, it is
essential that "hands off" backing at an adequate
level be committed to stay with the effort for at

least two years--three is probably more realistic.
It will take that long to familiarize people with
the total scope of the process in ways that help
them see their own particular use of it, and for
them to relate to it comfortably.

Credibility of the ACCESS project in the region
was severely stressed by the "stop and go" nature
of the project attributible to its uncertain fund-
ing. Some action-oriented people, naturally sus-
picious of outsiders anyway., could not perceive
the funding.reason behind the project's lack of
continuity. Extraordinary .expenses for communica-
tions and staff time were thus required to sustain
community interest.

(The evolution of the ACCESS concept [see pages
30-31] involved two 'one-to-three month contracts,
then six months of no funding and then the nine
months of the project. During this entire span of
time, at least a third of the Principal Investigator's
time went into searches for funding. This is
not the way to launch such a difficult project.
[See also Funding in this subsection.])

Staffing

To achieve both the desired local involvement and
the application of technical knowledge to initiat-
ing the process, the minimum staff is three per-
sons, assisted by consultants and volunteers.
Staff skills required are professional-technical,
community relations and an administrative secretary.

(The ACCESS project was "staffed" by the Principal
Investigator and a secretary, plus uncertain
funding for part-time assistance and consultants.
The important and time-consuming business of
community relations was necessarily slighted
because of efforts required to develop the conceptual
design, to report and to develop additional sustain-
ing funds.)

Involvement

The design of an ACCESS process should be open
and available to all interested groups of the
region from the outset. There will tend to be a

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limited number of volunteers involved in a complex, neutral forum, abstract information process such as ACCESS, especially at first, but the opportunity and invitation should be there. A project such as ACCESS does not have the emotional appeal of many public interest groups. Volunteers tend to work for a felt "cause" and are most easily organized "against" some outside threat.

Involvement in any _new_ activity is difficult in the face of many already established community volunteer activities.

(The previous volunteer experience of ACCESS members showed clearly in their participation. It is probably also true that time spent in ACCESS meetings, which often ran 2-3 hours, drained time away from other volunteer organizations and in that sense "competed" with them.

The relaxed, leisurely pace of the South Coast Region made it somewhat difficult to gain the involvement of some in the short term project quickly enough.

The fact that people of the South Coast Region are so concerned with its environment, (especially those taking part in the ACCESS project) is probably the basic reason the self and peer selected people who started with ACCESS in May 1974 have stayed with it all through its uncertain "stop and go" evolution.)

Timing

The groundwork for organization needs to have taken place in time to involve people in the early Fall. Most people organize for the year's activities at the opening of the school year.

(Local commitments to the ACCESS project were made May - July 1973. The National Science Foundation funded the ACCESS project in January 1974. It took until May 1974 to get ACCESS organized to the extent people could be usefully involved in its work. By then people were already either busy completing projects or getting ready for summer vacations Still, 90 showed up in May and most of them stayed on.)

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Expectations

The complexities of establishing a technically competent regional policy making process are difficult to explain. People tend to expect more than is possible. This makes tangible "by-products" during the initiating activities especially important to help facilitate the early establishment of credibility.

Education takes time and people tend to be impatient. Besides they are already busy. Two years before results is too long to wait. Actually, six months is too long. People tend to want instant solutions. Formal organization of the project, identifying its local leadership, and simple overhead slides, or other visual communication explaining the purpose of the process being developed, may be the earliest possible "products".

(The ACCESS project foresaw the need of early products and planned for regional policy statements in the Design Phase. Unfortunately, those statements were delivered six months late for maximum local interest, due to the gap between local commitments in June 1973 and NSF funding in January 1974.)

Minorities

The long-range future is a vague abstraction to most people. This is especially true for low income, racial or ethnic groups with immediate, felt needs outside the awareness of the larger community. A special effort is needed to reach such groups and other difficult-to-involve individuals such as young people, old people and women.

(Chicanos are the primary ethnic minority group [28%] in the South Coast Region of Santa Barbara County; blacks compose about 1%. The Chicano people of the region are not organized as one group. There may be a score of separate Chicano communities, but that is not known, nor are all their leaders identified.

An unsuccessful attempt to involve Chicanos was made through one group in the spring of 1973.

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Foundation support for this purpose and, most
recently, to develop and staff an independent
panel of ethnic leaders to help them relate long-
range policy and planning to the interests of
their people, has not yet been found.

The ACCESS project will continue to strive for
the active participation of hard-to-reach indivi-
duals in its program.   It has been only modestly
successful in this to date.)

Funding

Wide community support at the outset is necessary
if there is to be credibility for the ultimate
process developed.   Funding from one or a limited
number of sources is satisfactory only if the
source (or sources) is recognized to be, and is,
strictly insulated from the power to manipulate
either the organizing initiatives or the process
that is developed.

Desirable as it may be, funding from local public
bodies runs the risk of their action-oriented
over-expectations.   This can make the project
vulnerable to political pressure unless that
funding is committed over the life of the initiat-
ing efforts.

Reliance on local governmental funding tends to
dampen innovation because of the political risks
involved in financing experiments, especially
when there is always a competition for scarce,
discretionary local funds.

(First commitments of funds for the ACCESS project
were assembled by the Principal Investigator from
a wide spectrum of community organizations in the
South Coast Region.   A total of $12,000 was sought
with no more than $2,000 from any one sponsor.
Ultimately, $12,045 in cash was raised locally,
and during 1974 an additional $5,600 of in-kind
services, office space, furnishing, etc. was
provided.

Most of the local financing was accomplished by
June 1973, six months before funds were committed
by the National Science Foundation.   However, one

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major local sponsor ($1,000) did not commit until
the winter of 1973-74 and one other ($2,000) did
not make payment until April 1975. A considerable
portion of the Principal Investigator's time was
diverted to seeking and collecting local and
national funding.

By the spring of 1974, it had become evident that
the local funds ($12,000) and NSF funds ($67,500)
committed were insufficient to achieve the purpose
of the Design Phase. Time spent by the Principal
Investigator, especially in seeking additional
funds from national foundations and federal
agencies, became a serious drain on the project.
As it turned out, no such additional funding was
secured except from NSF.

An NSF site visit in June 1974 and the July
1974 national evaluation, verified the worth of
the project and the need for funds. This was
sufficient to increase NSF support to a total of
$120,700. In May 1975, NSF added an additional
$11,800 for extra copies of ACCESS publications,
duplication of its visual productions and for
time of the Principal Investigator to make pre-
sentations in Washington and elsewhere. This last
grant was for "utilization", to maximize the
transfer of what had been learned from the ACCESS
Research Phase, and to seek future involvement of
line federal agencies.

In addition, the Principal Investigator's records,
after deducting the utilization grant, show that
as of August 1975 he had contributed $36,000 in
consulting services and $13,000 in cash to
sustain the project since Design Phase funding
ceased October 31, 1974.)

Technology

A regional policy process like ACCESS which
attempts to recognize and deal with the complexity
of our fast-changing reality, seeks to span infor-
mation requirements from decision making to
citizen involvement. This is seen to require a
much greater use of visual communication, which
of itself seems generally accepted. But mention
of the _means_ by which this sort of communication
can be achieved, (especially in large regions,)

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through computers and two-way cable television, frightens some people. It is important to recognize this.

There are people, unacquainted with telecommunication technology themselves, and suspicious about organizations that can afford it, who are apprehensive about an information handling system that proposes to involve more people in regional policy making by using computer-assisted graphics. (The necessity to protect privacy, general access to information, and freedom from manipulation are recognized as basic to any ACCESS-like process.)

There are other people in organizations that already use modern telecommunications who are skeptical about making it available to broad publics, especially if it increases citizen involvement in regional decision making.

Among some elected officials, their boards and staffs, there are people who see in more citizen involvement a threat to their own roles. They also recognize no priority need for costly information-handling equipment, especially if it is graphic, since they tend to be people who themselves are quite facile with verbal communication but not graphic communication. (See Section I, THESIS, p. 4.)

It is a mistake to place early emphasis on the technology required for a regional policy making process able to cope with the complexity of major metropolitan regions and states. Whereas such telecommunications technology cannot be overlooked, it is more vital to establish how it is to be managed, especially the safeguards—and what it will accomplish.

Following is a diagram which is a representation of the acceptance of various groups regarding the use of technology for citizen participation. It is a slightly modified version of a diagram by Stuart Umpleby, University of Illinois. 54/

54/Umpleby, Stuart S. "Is Greater Citizen Participation in Planning Possible and Desirable?" Technological Forecasting and Social Change, New York, American Elsevier Publishing Co. 1972, pp. 61-76.

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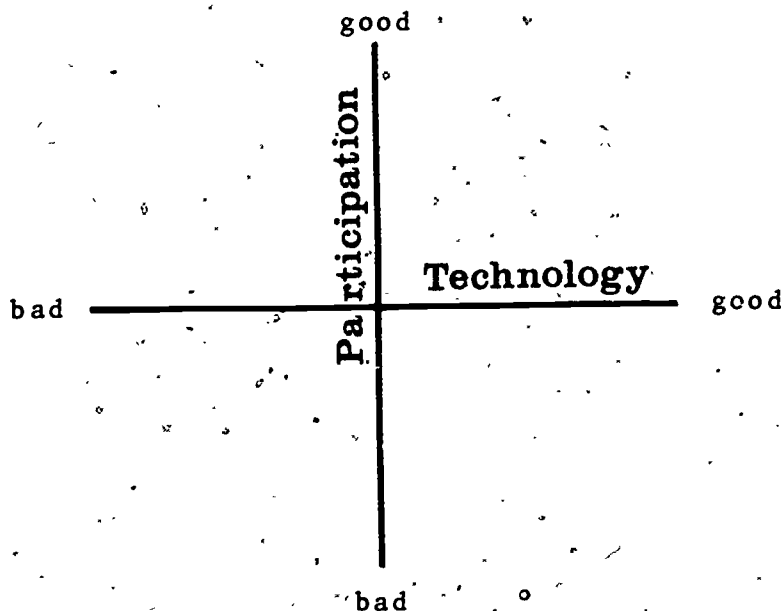
HOW CERTAIN GROUPS VIEW PARTICIPATION AND TECHNOLOGY

The logical possibilities expressed by this diagram
were discovered in the actual experience of organiz-
ing the ACCESS project. Citizen members of the
ACCESS project are themselves advocates of more
information to help decision makers, including more
citizen feedback. ACCESS members support the
need to employ appropriate modern telecommunica-
tions as an "anti-body" to help control misapplica-
tions of technology. (The ACCESS project has
representatives in all sectors of the community.)

The most evident opposition in the region to the
ACCESS concept to date has come from individuals
who see more citizen participation as "good" but
believe using more technology to achieve it is
"bad". (The upper left quadrant of the diagram.)

Some persons of the South Coast Region, as in the
lower right quadrant of Umpleby's diagram, have tended
to be apathetic to the ACCESS proposal to broaden
the traditional definition of regional policy
maker. They recognize the utility of modern
communication technology but are fearful about
dropping the quality of information and decision
making capabilities if the regional policy making
process is opened to more people. Their apathy,
rather than direct opposition may be explained by

their knowledge of the costs involved in initiating actual application of such technology.

Those in the South Coast Region who are against both more citizen participation and more technology to achieve it would locate themselves in the lower left hand quadrant of the diagram. These tend to be individuals who see the present operation of representative government as already providing adequate citizen participation. Their distrust of technology is easier to express openly than opposition to new forms of citizen participation.

A weakness of the small scale of the ACCESS test region is that much of the region's business is conducted "face to face". This makes it difficult for some to imagine the necessity for exploring the use of improved communications technology. And some in the region may not share the Principal Investigator's conviction that the experience in citizen involvement of the South Coast Region has a significant contribution to make to other—large scale—regions, especially if it is coupled with the development of interactive graphic telecommunications.

The ACCESS project's close association with technology in the South Coast Region has another liability. This being a region that seeks to "preserve" and "conserve" is the home of some people who readily perceive in the application of any technology the threat of unwanted change. But this is not a view held by this Region exclusively. The ability of people in the South Coast Region to articulate this viewpoint is, in fact, one of the reasons for selecting it.

V. Next Steps

V. NEXT STEPS

National evaluators of the ACCESS project conclud-
ed in July, 1974, as had the ACCESS membership
previously, that the ACCESS process being designed
should be tested with specific regional issues.
Only in this way can the process be understood and
its design made practical. A number of possible
issues were discussed in the following month by
ACCESS members. Ultimately two were selected:
Fuel Breaks in the Santa Ynez Mountains and the
Impact of the Quality and Quantity of Water on
Land Use.

This section summarizes the national evaluation
and describes the one-year Pilot Test based on
these selected regional issues. It also sketches
the 3-5 year Region-wide System Research Demonstra-
tion to which the Pilot Test might lead, and
discusses the design of components for the demon-
strations which would also be undertaken during
the Pilot Test.

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OBSERVATIONS AND RECOMMENDATIONS
OF THE NATIONAL EVALUATION

During July 26-27, 1974 in Santa Barbara, a dis-
tinguished panel of seven evaluators (proposed by
the Principal Investigator; approved and funded by
NSF in the original grant application) and eight
other observers, examined the nascent ACCESS
project.55/   This evaluation was scheduled midway
in the project's development--late enough to
identify project policies and progress, early
enough that the project could still benefit in the
Design Phase from a skilled, objective critique.
Although those named as evaluators led the examina-
tion, the observers joined in freely and also
provided written comments.

The conclusions and recommendations of the evalua-
tion both validated and challenged the ACCESS
project.   This could be summarized as follows:

- the project is creative, timely, promising, and
  is working on an important and difficult problem;

- the project is making progress despite various
  obstacles;

- the project should be given additional funding
  to support a second research phase for about one
  year after the current design phase ends in
  November 1974 and before the 3 to 5 year
  demonstration;

- the project should begin to make its activities
  more concrete and specific; this could involve
  demonstrations of current issues and their
  alternatives;

- the project should present a range of alter-
  native activities which it would pursue in the
  one-year phase, along with estimates of funds
  and other resources required, and possible
  phasing of alternatives.

55/For the full listing of the out-of-town persons
   taking part July 26-27, see the APPENDIX, p. 180

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The outstanding qualifications of those assembled
for the evaluation and their appreciation of the
national significance of the issue which ACCESS
confronts deserve more than the brief summary
just provided. To accomplish this, verbatim
extracts from evaluator's observations are
provided (the indented paragraphs), preceeded by
the Principal Investigator's overall summary of
evaluator's comments (underlined).56/

The Problem

1. Is the ACCESS project addressing a significant
    nationwide problem?   Yes.

        ACCESS claims to address a major national
        issue--one that, in my view, qualifies as
        a candidate for the major national issue
        presently before us: the quality and
        effectiveness of public learning in America
        ....Trust in local and regional units of
        Government, and participation in their
        processes, seems at a fairly low point.
        The project attempts to identify local and
        regional decision-makers, to inform them
        concerning major issues and to provide
        them with a means for participating in
        significant problem-solving efforts. This
        is not viewed as a process which would
        operate outside of traditional political
        units and structures, but which would open
        these "to a greater extent and make their
        actions more acceptable to the communities
        they serve."

        The ACCESS project is creative, timely
        and promising. American society functions
        through two principal channels, one of
        which is official or governmental; the
        other is private, or civic. If the public
        order is to operate most effectively
        it must be strengthened by an informed,

56/All the written comments are available verbatim
    in ACCESS Design Phase, Documentation, Volume B.

continuing and vigorous private sector.
Project ACCESS is an institution-building
initiative at the level of small region
(county) government....I am deeply im-
pressed with the far-reaching importance
of the problem which ACCESS is tackling--
it was significantly summed up by one
of the commentators as being the essence
of our continuing ability to govern our-
selves.

2. Is the ACCESS emphasis on region and policy-
maker, (from the traditional decision-maker
in organizations to the individual citizen),
useful for attacking the problem? **Basic
and correct.**

3. Is the ACCESS emphasis on accessible informa-
tion and graphic communication, utilized
through a non-profit institutional base,
worthy of further exploration? **Yes.**

Exploring the feasibility of applying
scientific advances as an aid to public
participation in local and regional
decision-making is an appropriate
project for NSF sponsorship under its
program of Research Applied to National
Needs.

4. Is the ACCESS learning experience transfer-
rable to other regions? **Yes, probably.**

The "Regional Situation Room" gives ACCESS
a character of its own and will enable
widely diverging groups in Santa Barbara
County to come together not only to utilize
graphics or hook into computer terminals,
but also to interact affectively as well
as cognitively. This unique forum can
help narrow the issues of disagreement
between contending parties or, in the
alternative, find common stands that
neither group had thought of. The
forum must be maintained and enhanced.

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5. Other Comments?

> The principal problem to be dealt with by
> the ACCESS process is not so much one of
> scale as it is of political relations;
> the number of regions with low urban
> populations is vast; demographic trends
> show population in non-metropolitan areas
> increasing faster than in metropolitan
> areas.

> It seems to me that one of the weaknesses
> of the literature and practice of community
> development has been precisely in the area
> of information gathering, communicating,
> and utilization. As our industrial society
> grows ever more complex, the things
> citizens learn in their families and in
> school are increasingly inadequate for
> providing them with the information they
> need to make intelligent decisions regard-
> ing development. I also endorse the region-
> al approach and the aim to develop an
> informational system that will enable
> ordinary citizens and citizens groups to
> have some impact upon development decisions.

> One of the major problems of linking infor-
> mation to development decisions is provid-
> ing ways in which diverse and technical
> data can be conveyed in interesting and
> understandable form to non-professionals
> in the planning field. As ACCESS learns
> how to do this, it seems to me that the
> ACCESS experience should be transferred to
> other regions.

The Project

6. Is it appropriate to define and test the ACCESS
concept in a region with a small urban popula-
tion such as the South Coast Region?   Yes.

> The region is complex enough to be
> interesting and yet not so complex
> as to be overwhelming. Most real-world
> socio-political research projects deal
> with much less complex communities than

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this one which makes them of little
general use.

Santa Barbara, with the high spirit of
citizen involvement and a conducive
combination of geographical and social
factors, offers a suitable testing ground.

7. Is it appropriate for ACCESS to deal simul-
taneously with theory and operation—with two
"clients" at once: the National Science
Foundation and the South Coast Region?   Yes.

8. What appear to you to be the goals of the
ACCESS project? In this initial 9 month phase?
In a 3-5 year pilot test? Are they well
related to the problem?   Overly ambitious
in the Design Phase. The emphasis on action/
research was valid but the way was paved for
psychological disappointment.

The goal of identifying the many policy-
making components of the South Coast Region
and to pull them together into a unified
open, structured process is a very desirous
one, but this is not a task that one might
expect to accomplish overnight....Even so,
progress has been made on each objective of
the Design Phase:

- analysis, synthesis and communication of
  regional problems and options for policy-
  makers and the public;

- to provide technological input to
  regional decision making and to
  experiment with new technology to
  communicate problems and options,
  and to obtain feedback;

- to base activities on private sector,
  public interest activity;

- to involve policy-makers;

- to serve as a model for other regions
  and for future-oriented activities
  during the U.S. Bicentennial Era.

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9. Is the ACCESS concept of openness to all people
    and all ideas during its design phase appro-
    priate?   _Essential._

        But openness can be awkward in the early
        stages especially. It risks encouraging
        false expectations, especially if openness
        occurs before experts provide a sense of
        direction by means of a plan.

10. Does the ACCESS concept duplicate, parallel
    or supplement existing institutions in the
    region?   _Not its generalist function._

        However, it could be viewed by some as
        competitive until its purpose is clarified
        by an action program.

11, Is the ACCESS concept understood in the
    region?   _No._

        There is a low level of understanding but
        surprising respect and credibility.
        (See 17 below.)

12. Are the resources at the disposal of ACCESS
    adequate to its initial purpose of design and
    review?   _No._

        Not enough time or funds for the Design
        Phase. (See 17 below.)

        The perception that such support is forth-
        coming, and that therefore the project is
        a long term one, is a necessary ingredient
        to meaningful community involvement.

Possibilities

13. Does the ACCESS concept face unusual obstruc-
    tions in the South Coast Region compared to
    what it would meet in other locations?   _No._

        The major obstructions are political, not
        unique to the region...new enterprises
        such as this are bound to run into some
        sort of opposition wherever they are
        attempted..._But_ ACCESS took a heavy risk

when it chose the South Coast Region.
The educational, economic and other
assets of the population are high enough
to generate intense competition among
civic groups without marshalling a strong
sense of direction.

14. Are there other equally developed possibilities
    elsewhere?   Yes, but...

    I have seen no other project so dedicated
    to the goal of enabling a citizen to make
    public choices with some understanding of
    what their long-term consequences might
    be. The concept of ACCESS is steeped in
    the American tradition. De Tocqueville's
    emphasis on the peculiar but vital
    liberty we call "freedom of association"
    is testimony to this....The failure of
    ACCESS, which is almost ideally sited,
    would not only be a setback for this
    project itself, but would discourage new
    means for citizen participation in
    government throughout the United States.
    For those of us who believe that the
    laity as well as the "expert" should
    make and implement public policy, the
    death of ACCESS would indeed be discourag-
    ing.

15. Other Comments?

    One uniqueness of ACCESS is the reversal
    of the centralization of resources in the
    society. It affords a local concentration
    of resources not otherwise available....
    The potential impact of the ACCESS process
    on the political processes of policy and
    decision-making is incalcuable. The
    prospect of a truly enlightened electorate
    is very exciting, indeed. However, it can
    be equally frightening or threatening to
    certain political figures and special
    interest groups. This leads to what I
    see as the major obstacle to the success
    of ACCESS: institutional jealousy and
    fear on the part of those agencies and
    interest groups which ACCESS would like to
    serve.

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ACCESS can provide policy research with a
difference. Unlike other policy research
organizations, ACCESS...

(a) has a local focus

and

(b) not only requires citizen
participation, but sees itself
as a policy research arm of
local publics.

The policy sciences are now a well-estab-
lished academic discipline, and ACCESS
could be perhaps the model use of them
in a mission-oriented way.

Overall Evaluation and Recommendation

16. What are the chances for useful further ex-
ploration of ACCESS in the South Coast Region?
A gamble but an interesting one.

The Principal Investigator is on sound
ground when he emphasizes persuasion,
communication and tentativeness. It is
not astonishing to find that he runs into
many culturally generated snags despite
the patient and open manner that is so
obviously his own. It is much easier
to take a strong promotional line that
conforms to a pattern that has often led
to the triumph of "causes" without
transforming either the policy sharing
volition or the capability of the "target"
community.

The ACCESS concept of affording citizen
groups a strong voice in local-regional
planning and decision-making is a unique
and worthy one. However, it is also
a complex and time-consuming one to
implement. A great deal of urban regional
planning is currently underway in the
Santa Barbara region, with some twelve
projects involving such subjects as
population trends, educational needs,

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housing, and water resources and coastal
development. ACCESS must find a uniquely
useful role in this complex of on-going
planning activities, and this utility
must become evident to a cross-section
of the region's influential citizens.

17. What time, budget, organization, and other
     suggestions do you have to make? For the
     design and review phase? For the 3-5 year
     project? · <u>There is need to fund a one- year period</u>
     <u>of consolidation, a Pilot Test, before the</u>
     <u>3- 5 year system test.</u>

     The project needs to quickly and carefully
     pick a concrete regional issue, benign to
     the future of the ACCESS project (but
     appealing to everybody), to demonstrate
     itself. This should be done at once.
     ACCESS is not ready to go to a 3-5 year
     test. The project should be attractive
     and ambiguous and not limited to one issue
     or one function. In the next stage staff
     should be trained; and there should be
     more emphasis on affective communications.

     Policy research, data base assembly and
     simulation are not possible at this stage.
     Computers should be de-emphasized--the
     public is not comfortable with them.
     Instead, focus should be on improved
     public inquiry into policy issues confront-
     ing the region.

THE ONE YEAR PILOT TEST - TWO DEMONSTRATION ISSUES

The business of designing the ACCESS process was,
in the Design Phase, of necessity somewhat abstract.
Basic elements of the system--a site, essential
information, participants, and methods for partici-
pation--had to be assembled and put into place.

During this time it has been difficult to assess
the usefulness of ACCESS operations. This was
recognized both by ACCESS committees and
the evaluators. In a series of working sessions
with ACCESS members in August, 1974, two pilot

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issues were selected to refine the ACCESS process
design and make it more concrete.

The Pilot Test of the project will address two
specific regional issues chosen during the Design
Phase by the citizens involved in the ACCESS
project:

1.) Fuel Breaks in the Santa Ynez Mountains,
    and

2) Water quality and quantity as it relates
   to population growth, density and alter-
   native land use patterns.57/

In addressing the alternatives for these two issues,
the project will be concerned with all ten elements
of the ACCESS process design. (See Section III,
CONCEPT, pp. 56 & 61.) In this discussion about
the issues we will stress just four of them:

   - The set of important Policy Questions which
     the ACCESS process attempts to address:
     (Problem, Causes, Impacts, Options, Impacts
     of Options, Implementation, Conditions for
     Success, Costs and Benefits, Criteria for
     Evaluation, Trade offs, Priority; and

   - How to study and communicate about these
     important policy questions. (This involves
     Intellectual Tools; Social Processes; and
     Technological Tools.)

Fuel-Breaks

This test will focus on the issue of fuel-breaks
on the Santa Barbara Front of the Santa Ynez
Mountains. It is obvious that the public impact
of creating fuel-breaks will be significant be-
cause the ridges constitute one of the region's
most powerful visual pleasures.

57/See Section III, DESIGN PHASE, p. 58 for basic
   issues from which these were selected.
   Pilot tests could be developed around any of
   these issues.

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There are alternative methods of clearing the ridges,
but no matter which one is finally adopted, the
impact of tne fuel breaks will be highly visible
throughout the South Coast Region. The seaward face
of the Front and the Pacific Coastline bound the
region's form which is that of a corridor. The
horizon line of the sea and the mountains are its
"walls" and the fuel breaks, like the existing
offshore oil rigs, are likely to be extremely
controversial.

But the fuel-break issue is one which involves not only
questions about the alternatives of <u>how</u> to under-
take fuel-breaks, but also questions concerning
<u>whether</u> to create fuel-breaks and what the long-
range impacts are if fuel breaks are not cut into
the Santa Ynez Front.

It should be recognized that the immediate damage
caused by a wildfire is not necessarily the most
severe impact, especially when the fire occurs
in rugged terrain adjacent to a heavily developed
area. Typically, the fire removes substantial
amounts of vegetative cover from the slopes it
burns, exposing the underlying soil and rock
materials to erosion. Winter rains then dislodge
these materials, creating floods and dumping
large quantities of sediment downstream in densely
populated ar:as which may not have been at all
affected by the fire itself.

Figures prepared by the staff of the Los Padres
National Forest--whose boundaries include the
section of the Santa Ynez mountains, known as the
Santa Barbara Front, which rises directly behind
the South Coast Region's population centers--indi-
cate that the sedime.it deposition rate during the
first winter after a fire can increase up to 43
times the normal. This can result in the removal of
approximately 51,000 cubic yards of soil and rock
per square mile of burned watershed cover.

Fire is a particularly urgent danger along the
Santa Barbara Front both because of the extreme
proximity of urbanized areas and the unusually
steep slope of the mountains themselves. The
slope is so great in most areas that it is impos-
sible to use conventional fire-fighting equipment

(trucks, bulldozers, etc.). Fires must be controlled
almost entirely by hand; in some locations the use
of mountain-climbing gear or helicopter is necessary
even to reach the ridges.

Forest Service officials nationally and locally
are experienced in computer-assisted information and
analysis, and are convinced of the need to achieve
improved public involvement in policymaking. Los
Padres National Forest supervisors have agreed to
work with the ACCESS project to present to the
public the reasons for undertaking the construction
of fuel breaks, and the various implementation
options. They have further agreed to incorporate the
opinions of South Coast citizens derived from these
presentations into their final determination.

Presentation. In presenting the fuel break policy
options, the ACCESS project plans to use both
static and dynamic computer-assisted visual
presentations to study alternative possibilities.
The actual site for the alternatives treatments
will determine which portion of the Front is to be
photographed or modeled. ACCESS will convene
a special committee to make that selection.

To orient the viewer, a 1" = 2000' contour model
of the South Coast Region and its vicinity will be
tinted to match the Simulator model. A simulated
helicoptor or plane flight over the 1" = 2000'
model at a simulated elevation of 3,000 feet will
quickly convey the overall effect of the fuel
breaks and provide a means to relate the boundary
of Los Padres National Forest to existing and
pending development. (This model would also be
used for the water issue examination). It would
be on public display in the ACCESS "Regional
Situation Room" in downtown Santa Barbara, positioned
on the ACCESS conference table. It would provide
a unique means of communication for community
forums and would be photographed and videotaped
in numerous demonstrations.

The Forest Service, with The Aerospace Corporation,
has just completed the development and testing of
the MOSAIC computer program for accurately relat-
ing potential fuel breaks to the contours of the
land in a static mode. This is accomplished first

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by digitizing the contours of the land in the
vicinity of selected sites and then, by locating the
fuel breaks on those contours. The contours of the
fuel breaks are then overlaid on a color photograph
of the site, taken from any vantage point.

Having precisely located the fuel break, the
portion of it that can be seen from a selected
vantage point is drawn in by an artist using an
airbrush. The result is an accurate portrayal
of the aesthetic impact of the fuel break. With
the MOSAIC technique, alternative locations for
fuel breaks and varying landscaping treatments can
be examined readily.

For dynamic presentation, the ACCESS project may
also employ visual simulation technology developed
the University of California, Berkeley, under
e sponsorship of the National Science Foundation
(depending on availability as determined by NSF).
The Berkeley Simulator is a sophisticated computer-
guided device which drives an optical probe and
camera assembly through small-scale models, produc-
ing highly realistic films, videotape or live TV
output. A 16mm movie may be produced presenting
the problem and each of the alternative solutions.

The basic Simulator model would be constructed at
a scale of 1" = 200' except for the area immediately
adjacent to the route of travel which would be
modeled at 1" = 30' for the sake of achieving
extremely realistic detail in the viewer's foreground.
Each fuel-break alternative (clear cutting, selective
cutting, landscape design and species substitution)
would first be viewed in a series of oblique pans
from a "vehicle" traveling along Highway 101.
After a run of one-and-a-half to two-scale miles,
for instance, the vehicle could turn off 101 onto
San Ysidro Road for approximately three-quarters
of a scale mile, stopping in a parking space which
would allow a final 110° to 160° pan of the entire
Front. Each of the four runs (one for each fuel
break alternative) will last two-and-a-half minutes.

The total presentation of the fuel-break issue,
however, must also, and with clarity, convey the
fire, flood and landslide dangers to life and
property. Obviously, all of this cannot be

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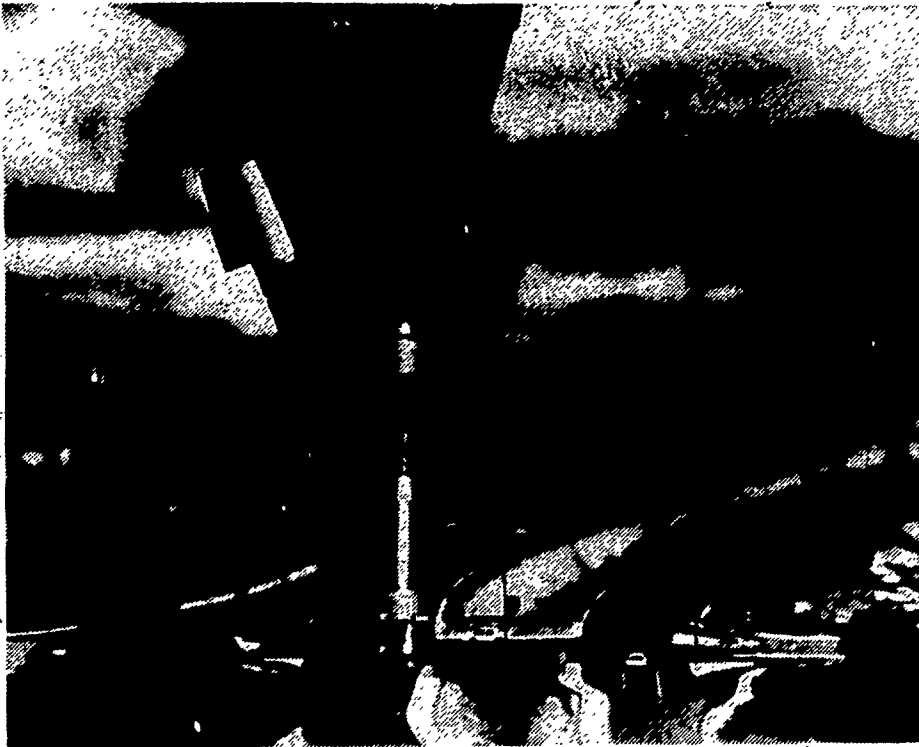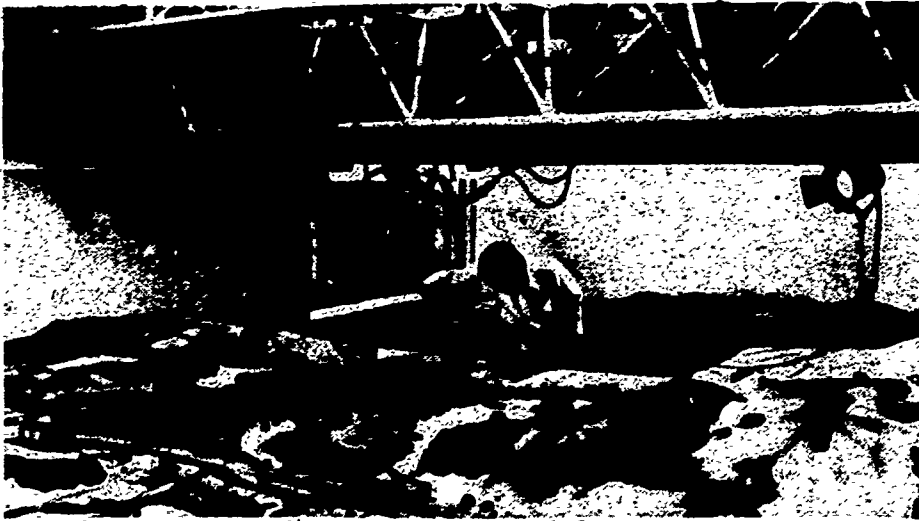
HIGHLY REALISTIC DYNAMIC PERCEPTIONS of small scale physical models can be made by means of a special lens, suspended from a gantry. Movement of the lens is guided with the aid of a mini-computer. The motion pictures that result accurately simulate what a person would see at eye-level from a moving car. (photographs courtesy Environmental Simulation Laboratory, University of California, Berkeley)

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A topographic grid is plotted to match a photograph.
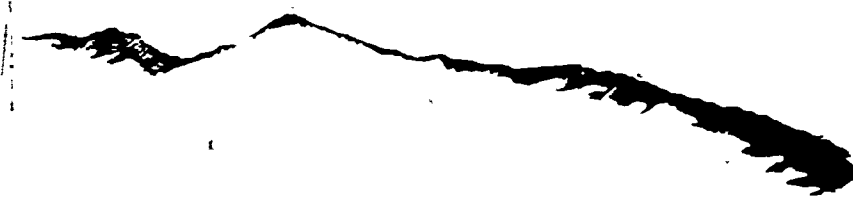
A physical change is then defined on the topographic grid
and accurately located on the photograph below.
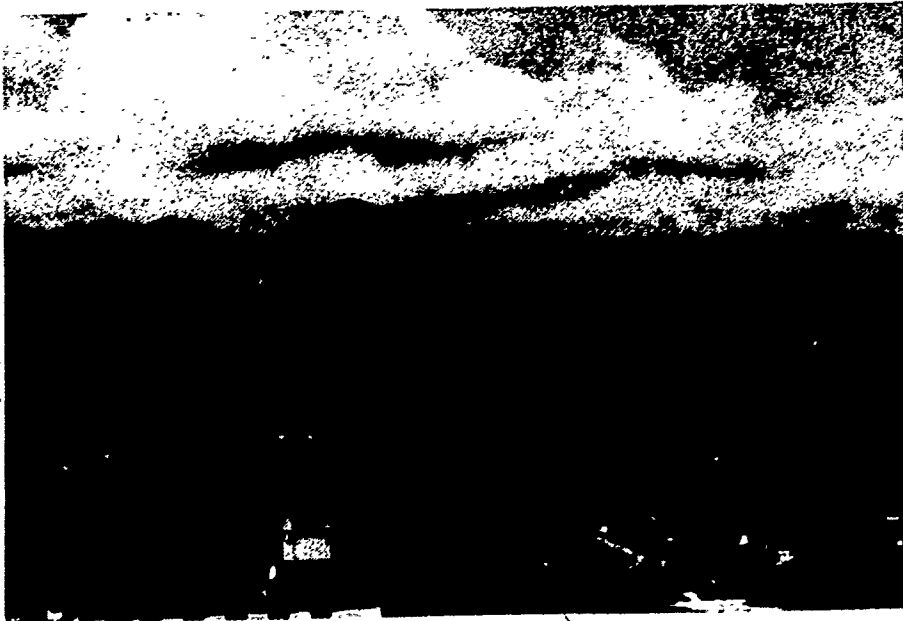
ACCURATE STATIC PRESENTATIONS are possible with the compu-
ter program MOSAIC, developed for the U.S. Forest Service.
A proposed physical change--in this case a fuel break in
the Santa Ynez Mountains behind Santa Barbara--can be
accurately located and then realistically portrayed by an
artist. (courtesy Aerospace Corporation)

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handled by either the dynamic Simulator or the
static MOSAIC prepared photography. Other graphic/
visual means must be used, including animation,
diagrams and charts to convey social and economic
impacts of policy decisions concerning fuel-breaks.

Water

The issue under discussion, water, is a highly
controversial matter in the South Coast Region of
Santa Barbara County. The manner in which the
issue is handled, the openness with which Work
Committees are formed, the manner in which challenges,
to data and information are treated, the extent to
which information is used can contribute consider-
ably to the credibility of the ACCESS project.

It is not presumed that in the one year Pilot
Test there will be the once-and-for-all definitive
contrast of alternatives concerning the importation
of water. However, the method whereby a region
can learn more about an issue of critical impor-
tance to it can be defined. Both quantity and
the quality of water would be explored; including
importation as well as conservation of water.

Throughout the Southwestern United States, includ-
ing Southern California, the availability and
quality of water is a major determinant of
population growth and land use patterns. In
effect, the nature of the local water supply--
its quantity and quality--tends to limit the
number of people a particular area can accommodate
and the types of use to which the land can be put.
If an urbanizing area, such as Los Angeles,
increases dramatically in size, it is typically
necessary to supplement the local water supply by
importing water, e.g., from sources in Northern
California.

The South Coast Region of Santa Barbara County is
currently at the point where demand approximately
equals the yield from the water sources available
in the region. Demand in the South Coast Region
was estimated to be 45,000 acre-feet in 1973,
exactly the estimated obtainable supply from
present sources. Most of the local water supply is
held in two reservoirs, Cachuma Reservoir (22,900 acre-feet in

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1973) and Gibraltar Reservoir (2,500 acre-feet).
Four ground water basins yield an additional 12,500
acre-feet.

Without a major breakthrough in regional water
conservation, including recycling, the existing
water supply in the South Coast Region will not be
adequate to permit population growth in the long
term future. The region's limited supply of
water also does not permit any restructuring of its
economic base if that would significantly increase
water demand. Whether or not this fact is con-
sidered fortunate depends upon the point of view of
the particular citizen or decision-maker. Many
residents of the South Coast Region, anxious to
stop or severely limit population growth, regard
the restriction of the water supply as a powerful
means to achieve that control. Others, believing
that some growth is inevitable, desirable, or both,
wish to expand the present capacity of the water
supply system. The issue is an extremely contro-
versial one throughout the South Coast Region.

A great deal is at stake--the region's unique
"Quality of Life," its future economic viability,
its relationship to the major urban centers to the
south (i.e. Los Angeles)--and, therefore, the sub-
ject of water has been continuously debated in
recent years in political campaigns, in the media
and as a topic of everyday conversation.

The problem of water supply and quality has been
extensively examined by a number of public agencies
and consultants. (Greatest emphasis has been on
quantity, although the quality of imported water
would be of real significance to agriculture, water
softening and the taste of water.)

Four alternative Year 2000 projections concerning
water supply requirements, population growth and
land use mix are developed in the Toups Report.58/
This report and a new one by the County, Livingston
and Blayney's studies for the General

58/Water Resources Management Study: South Coast--
Santa Barbara County, 1974. Toups Corporation
of Santa Ana, California.

Plan revision, will form the basis of the ACCESS presentation. Minor refinements of the projections will be made from the County and Agricultural Extension Service data. In effect, the projections constitute (as amended by both quality and conservation) a set of options, each with distinct costs and benefits, about which the South Coast public may conduct a policy dialogue concerning the important policy questions outlined above.

Presentation. The first portion of the ACCESS presentation, would be devoted to an analysis of the existing patterns of water supply and consumption, population distribution and density, and land use in the region. This introductory portion of the presentation would include data and graphic materials obtained from NASA's remote sensing programs. Satellite photography and a physical model would be used to "zoom in" on the region and its various communities, thus providing a context, or rather, a graduated sequence of contexts, for the presentation.

The relation of this information to present land data would be shown. There are particular capabilities for this purpose in the Santa Barbara region. The University of California, Santa Barbara Department of Geography holds contracts with NASA now for remote-sensing interpretations (The sensors themselves are assembled by the Santa Barbara Research Center, a subsidiary of Hughes.)

Three 1975-2000 projections or alternatives would be displayed as computer-generated diagrams depicting land use in 1980, 1990 and 2000. (In the demonstrations described above, the three Year 2000 "futures" would be treated as alternative possibilities--zero, moderate and significant growth.)

Land use and population distribution and density would be shown for each alternative in solid colors on a perspective drawing of the South Coast Region generated by computer, then animated to show growth and change. Further, it will be possible to "window" or "zoom in" from an overall view of the region, to a community area, down to a grouping of buildings.

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This display of alternatives can be accomplished within the scope of the one-year Pilot Test by:

(1) digitizing hand-drawn maps consisting of land use and population planimetric data with topographic information available from Project FIRESCOPE (Riverside Fire Laboratory, U.S. Forest Service); which is

(2) input to computer program GDS* (Graphic Display System); then

(3) interfaced with program MAPIT*; which

(4) can either be output via program IGOR*59/ in hard copy using an optical reproduction machine or by color display monitor (driven by three scan conversion memories for 1024 x 800 points).

In addition, the 2000' scale topographic model would be used for orientation purposes, and other visual media as appropriate.

Television Format for the Two Issues

The basic procedure which the project would use to study and communicate about the two issues involves the creation of two one-hour long visual productions; one hour for each issue, broadcast on KEYT and then replayed on Santa Bárbara Cable Television.

Each television production would have the following components (in each of which every attempt would be made to make the selection of citizens and community groups involved diverse and representative):

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*59/In-house programs of the Remote Sensing Project at UC Berkeley. GDS is a highly developed graphic routine which allows perspective display and transformations which eliminated the "hidden-line" problem.

(1)   a filmed or videotaped analysis and
        presentation of the issue and the
        important policy questions with
        respect to the issue, prepared
        from work of the ACCESS Work Commit-
        tees, staff and consultants (about
        15 minutes);

(2)   a filmed or videotaped reaction to
        the ACCESS analysis and presentation
        of alternatives, by selected citizens
        and community groups (about 10
        minutes);

(3)   based on (1) and (2), and following
        them, studio dialogue concerning the
        issue, moderated by the ACCESS project
        and stimulated by, but not confined
        to points raised in components in
        (1) and (2), to be filmed or video-
        taped (about 20 minutes);

(4)   live, phone-in reaction to the ACCESS
        presentation and to the subsequent
        discussion (about 10 minutes or more);

(5)   summary by the moderator or moderators
        (about 5 minutes).

The visual productions, in videocassette form and
edited versions of them, would be on ACCESS's
video-player. Citizens would be able to select
and view the alternatives and reactions to them
at the ACCESS Regional Situation Room (and else-
where). They would be encouraged to register
general reactions, observations and preferences
on prepared forms.

The ACCESS process would be tested and completed
using the selected regional issues. The one year
Pilot Test would explore the credibility of
the ACCESS process, its capability to select and
process relevant information, to visually
communicate policy alternatives to policy-makers
and to enhance public involvement.

For each regional issue, ACCESS will organize committees

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which would help to define alternatives, and
edit their presentation. The visualizations that
result would convey the alternatives for the new
selected policy issues to representative community
groups. Reactions at these meetings would be
added to the total program. The ACCESS process,
which examines alternatives, and the diversity
of its sponsors and members, are, in themselves,
safeguards which assure objectivity. Work on
the specific issues selected for the one year
Pilot Test would demonstrate that fact and
would suggest how the process design might be
improved.

Discussion

This effort would be made in a way that recog-
nizes the potential threat inherent in any
powerful new means of communication. The ACCESS
project must demonstrate in its one year Pilot
Test that its interactive visual display –
of information is part of a process that
prevents:

(1) centralization of information closed to
     public examination, challenge and use;

(2) invasion of proprietary and personal
     information; and

(3) manipulation of data and information that
     distorts or forecloses thoughtful study
     of alternatives.

Policy-makers with differing viewpoints would
themselves also be involved in the actual creation
and use of presentations of alternatives for
television broadcasts. This includes also,
importantly, the videocassettes stemming from
those programs as used by small groups in
dialogue. The Work Committees organized for
this involvement would be supported by consultants
and staff work.

"Choices for '76" by the Regional Plan Associa-
tion of New York, "Alternatives for Washington"
(state) and a Maine television series funded by
HEW made use of television in exploring public

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issues, reaching about ten percent of the possible
viewing audiences. These have been useful
experiences, helpful to the development of the
ACCESS process, but they will not be repeated.
Computer assisted graphic images were not part of
those programs, nor were they produced for a
"Regional Situation Room."

The power of visual means of communication, within
a total process, would be studied in the ACCESS
Pilot Test. All presentations would be formatted
to be compatible with television (to make them
widely available), but broadcast is <u>not</u> their only
use. There is more happening to be tested than
can be learned from television market research
surveys. The major instrument for graphic presen-
tations would be the "Regional Situation Room,"
involving many levels of policy-makers, "covered"
by television.

Through the "Regional Situation Room," people can
understand options for solving regional issues
in their world, national and state context.
The local perceptions of a national issue may
be quite different than the national ones. Both
levels can be, and choose to be, quite ignorant
of the validity in each other's perception.
Yet, national policies must all be implemented
"locally." The visually equipped "Regional
Situation Room" should assist understanding of
the interrelationship of national policy and
local implementation.

Actual implementation of a national energy
policy, for instance, tends to happen in some
"local" place, from resource extraction, trans-
port and processing, to the generation of
electricity and its distribution. National
policy not made in Santa Barbara (but affected
by Santa Barbara interests) has important effects
on oil drilling off the coast of Santa Barbara,
transport in the ocean channel, and on-shore
processing.

A supertanker port and processing facility off
Point Conception, for both Indonesian and Alaskan
liquefied gas, are current subjects for <u>national</u>
environmental impact studies. Another energy

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matter for future debate is additional power
generation capacity in the region to serve a
block of western states.

How is balance to be achieved? When should regional
preferences prevail over existing national policies;
or vice-versa?

The omni-presence of various types of uncertainty,
the distribution of political power and a variety
of other factors lead to the conclusion that
absolute "answers" or "solutions" of the type
that can be specified and achieved in chess,
for example, do not exist for the sort of issues
which concern the citizens of the South Coast or
any other region of the world.

The fact that there are no unqualified, certain
answers does not mean that issues should not be
raised and debated. On the contrary, that
uncertainty <u>requires</u> intense and widespread public
discussion of problems, policy and action. If
definitive solutions existed, then individual,
highly-skilled technicians might be trusted to
discover them. But because solutions do not exist,
because the best that we can do is constantly to
"re-solve" problems or formulate approximate
answers, it is necessary to subject the issues
confronting us to the broadest possible scrutiny
and debate, and to develop a spectrum of policy
options. The ACCESS process recognizes this
and attempts to provide a process which involves
such an approach.

<u>THE ONE-YEAR PILOT TEST -
DESIGN OF REGIONWIDE SYSTEM COMPONENTS</u>

The presentation of the two regional issues
provides a means to simulate and to refine the
ACCESS process. To complete the ACCESS design
during the Pilot Test, certain components of the
regionwide system must be studied or designed
in greater detail than was previously possible.
Concurrent with the two pilot test issues, the
project would undertake six studies (see below).
The results of these studies would be disciplined
by the reality of their actual use in the 3-5
year Regionwide System Research Demonstration,
the next logical stage in the evolution of the

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ACCESS process. (The Design Elements, [pp. 56 &
61] to which the six studies would relate, are
given in parentheses below.)

Geo-Based Data Techniques Dialogue
(Intellectual Tool)

A state-of-the-art three day technical workshop
will help the ACCESS project select and price the
techniques to be used to structure data concerning
the South Coast Region. Continuing from the work-
shops of the Design Phase 60/one of the three days
would provide for discussions with the policy-makers
who could use a geography-based information system
(city and county officials, their boards and staffs;
professionals; educators; private decision
makers; non-profit citizens groups; voters).

Data related to specific operating functions within
the region (such as property descriptions, plats,
assessments, zoning, public works, commerce and
industry, traffic, utilities, housing, water, sewer)
would be maintained by the organization that
presently has responsibility for and greatest use
of that data. That data would be coded, indexed
and put into compatible computer format so that
it could be easily accessed from remote terminals,
and spatially displayed in relation to other data
and information.

The grid and polygon means of coding information
would be evaluated as well as the uses and tech-
niques of remotely sensed information. Experiences
of NASA, recent studies of the Interior Department's
RALI program, and others would be incorporated.
(See the Utilization subsection of Section IV,
DESIGN PHASE, p. 103.)

Bibliography of Data and Information Sources
(Intellectual Tool)

The ACCESS process will need traditional library
storage techniques tailored to the special purpose
of regional policy formulation. However, the volume
of accessible data required, the multiplicity of

60/See Resource Papers (1-3), APPENDIX, p. 174

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sources and interpretation into ordered informa-
tion require that information to be put in
machine-readable (computer) form.   In the Design
Phase the UCSB student survey verified the
difficulty of even locating information.61/   During
the one year Pilot Test, a machine-readable bibli-
ography of sources of data would be compiled.
The cost of this beginning effort has been estimated
by the University of California, Santa Barbara from
Design Phase studies by ACCESS staff and consul-
tants.62/ This study would provide realistic designs
and estimates of data and information costs for the
3-5 year Systems Test, including the extent to
which a computer assisted data base should be
developed. (At the same time, a useful policy-
making tool will have been acquired.)

Tabulation of Research Resources
(Intellectual Tool)

To facilitate people's access to expertise and to
each other, for the purpose of making policy, this
study would put into machine-readable form the
specific capabilities of people and institutions
of the region.   This inventory was begun in the
Design Phase.   The experience gained with survey
forms and their distribution has served as the
basis for estimating the cost of this listing.63/
It is recognized, for instance, that certain
private consulting firms have a proprietary
concern about specifically naming people and skills
in their employ. Yet, persons as private citizens
have skills they may want to employ for the t nefit
of the region in which they live, but have no
ready means to do so.   There was no roster of such
skills in the South Coast Region when the ACCESS
project began its work. What has been developed
by the ACCESS project is only a beginning, yet it
provides an estimate of what would be required to
make such information easily accessible to all.

61/See Resource Papers (1-1), APPENDIX, p. 173

62/See Resource Papers (1-3, 1-4, 1-5, 1-6),
    APPENDIX, p. 174

63/See Resource Papers (2-1, 2-2, 2-3, 2-4, 2-5,
    2-6), APPENDIX, p. 174

The Organization of ACCESS
(Institution-Organization)

Once the nature of the ACCESS process was estab-
lished with ACCESS committee members during the
Design Phase, study began on the organization of
people required to operate the ACCESS process.
Since January 1975, a committee has examined and
discussed with members of the ACCESS Advisory
Board the formal form of organization required.

For the Pilot Test, the ACCESS project will become
a new section of the 501(c)4 non-profit Community
Arts Association, incorporated in Santa Barbara in
1923.64/

A major task of the Pilot Test is to define a
national prototype organization for the ACCESS
process that is:

(1) able to service information and analysis
requests from policy-makers of all sorts
(elected government officials and corporate
executives to environmental groups and
interested individuals);

(2) representative of the people and institu-
tions of the region;

(3) legally qualified to receive grants and
execute contracts for services rendered.

The purpose of the ACCESS project is to design a
process which supplements official long-range
policy-making with a higher order of data, better
information, and more skilled technical analyses,
through two-way graphic telecommunications and
individual participation that has not yet been
possible anywhere in the nation. The particular
emphases of the ACCESS process are both to make
information and analysis of alternatives more

64/See Resource Papers (3-1, 3-`, 3-3, 3-4, 4-1)
in the APPENDIX, pp. 174-175

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available and understandable, __and__ to give the people
of the region a responsible means to make known
their priorities, attitudes, and abilities in order
to help resolve the region's problems and enhance
their Quality of Life.

The ACCESS project is an original effort:

(1) to collect and order regional data and
information;

(2) to analyze, synthesize and convey infor-
mation and analysis of alternative policies;

(3) to stimulate the integration of separate
data bases;

(4) to stimulate policy dialogue, informed by
research, for expert and citizen participa-
tion;

(5) to develop a new order of graphic communica-
tion for policy research and development
concerning future alternatives;

In a way that:

(1) is distinct in purpose from existing
institutions, but supplementary to them;

(2) facilitates the use of lay and expert
volunteers in conjunction with a skilled
staff and consultants, bringing to bear
high orders of technology, as appropriate;
and

(3) devises sources of funding and schedules of
user charges which support the process in
a manner which assures continuity and
objectivity.

The expertise of the University of California will
be made available to policy makers by means of its
Community and Organization Research Institute,
working through the Community Arts Association.

The ACCESS process must satisfy a broad range of
"publics," skills and motivations without seeking

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a specific resolution for a particular problem.
This will require an organization that includes in
its By-Laws provision for representatives of the
professions, business and labor; education and
culture; and public interest organizations. This
must be accomplished in liason with governmental
entities and unincorporated areas of the region
in such a way that there is representation of
geographic (community) interests and of age,
income, ethnic and minority groups.

Operational requirements of the ACCESS process,
besides funding, include:

Staff

    administration
    interdisciplinary policy analysis--social,
        economic, physical
    computer programming operations
    graphic communication
    information system management

Consultants

    university departments
    governmental agencies
    private corporations
    contracted individuals

Volunteers

    policy board members
    work committee members
    staff--contributed time; partially paid
    consultant--contributed time; partially paid

Facilities

    central work place--"Regional Situation Room"
    community and neighborhood meeting rooms
    telecommunications equipment and programs
    reference files

Means to Involve Hard-to-Reach Publics (Social Processes)

A major concern of ACCESS from its inception has been
broad representation from all age, income and ethnic groups.

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ACCESS would make an organized effort to involve the
hard to reach public during the one year Pilot Test,
especially the Chicano community (28% of the region's
people). An independent 5-7 member policy committee,
representative of various Chicano groups in the
region, is planned. The committee would be serviced
by professionals who would work with the ACCESS
Pilot Test as part of their effort to make compre-
hensible the long term consequences of current
regional policies and decisions. The objective is
to learn how to help the Chicano groups develop an
ability to see how regional interests and their
own future long term interests interrelate, and to
help them take a more active part in the long range
policy making process.

Graphic Telecommunication Facilities and Systems
(Technological Tools)

For the one year Pilot Test, a minimal amount of
equipment will be used in the Regional Situation
Room. (See Section IV, DESIGN PHASE, p. 100.)
How should this be expanded to a region-wide
system?65/ Graphic display in the "Regional
Situation Room," designed especially for this
purpose (and televised), provides the means for
many more people to become aware of the "different
realities" of the region as derived from different
perceptions of the same regional data, information
and analysis. This new awareness, learned in a
neutral forum, should help people move from ideolo-
gical advocacy of fixed positions to dialogue about
possibilities. By reducing ignorance, uncertainty
and sense of risk, people with naturally conflicting
interests may more readily discover what they
share, and be more prepared to work toward consensus.

To facilitate analysis, synthesis and communication
on issues of moment to the region, ACCESS would make
appropriate use of telecommunications technology.
However, ACCESS would not itself make actual regional
policy choices. Public and business decisions would
be made where they are now. The effect that is intend-
ed is to alter the agenda of policymakers, to better

65/Much of this subsection is edited from _Graphics_
for Regional Policy Making, pp. 7-15.

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illuminate their choices, and to involve many more
people in the total policy-making process. The
decisionmaker would have a much better informed
constituency and conversely. Even without the
power of decision, a competent, credible, non-profit
regional institution, such as ACCESS, with continuity
and its own base of communication, would provide
the region with a significant new means for policy
dialogue from which should arise better understand-
ing about regional issues and options.

Another practical discipline of the ACCESS concept
and design is to select, test and cost facilities
and telecommunications equipment for the 3-5 year
Region-wide Systems Research Demonstration and to
design the system in which they would be combined.66/

To date, two-way television has been oversold and
under-delivered, but that does not negate its
potential. In 1976, three full-scale community
demonstrations financed by NSF are underway. For
purposes of regional policy-making, technology is
available, but it is not believed practical to
begin with use of two-way television from Regional
Situation Rooms into each home of a community. A
more appropriate beginning would appear to be
multiple "Situation Rooms" of different degrees of
complexity within a region, for either separate
use or simultaneous interaction.

The ACCESS project would, in the 3-5 year Systems
Demonstration Test, equip a Regional Situation
Room which would be tied into computer-based infor-
mation sources and terminals/receivers in communi-
ties and neighborhoods throughout the region.
(Such a system in use would provide a research
base for studies in visual perception, information
assimilation, learning and communication.)

For active policy-makers the detail of images,
presentation of data, and the ability to "interro-
gate" various kinds of data sources might be
considerably greater than for the public at large.

66/See Resource Papers (5-1, 5-2, 6-1), APPENDIX,
    p. 175

One feature might be an on-line, computer-based "conferencing" arrangement. Numerous individuals could "confer" with each other at times of their own choosing, with the computer holding a record of all messages until accessed by "conference" members using computer terminals at different geographic locations throughout the South Coast Region.

The selection of computer terminals is critical to the goals they are to serve. Present terminals, and the programs they use, have been developed largely by or for middle management for operational purposes. If computers are to be used effectively for policy-making, adaptations of certain equipment and programs seem needed. Computer terminals should offer policy-makers:

(a) response to unstructured questions;
(b) visual display that is capable of continuous tone, color and movement;
(c) larger-size (than is typical now) display letters, in both upper and lower case;
(d) hard copy of any display;
(e) audio as well as visual responses;
(f) audio as well as graphic and keyboard inputs;
(g) interchange with other terminals in all modes (audio, graphic, keyboard, etc.);
(h) access to data for personal use at place of work, in designated public places (such as schools, or libraries or community centers) and at home;
(i) access to data for dialogue purposes in specially designed "Regional Situation Rooms".

Some of these capabilities are available now, but not all, and they would be needed in varying degrees of completeness at various locations. The "Regional Situation Room" would be the most completely equipped. Computer backup capacity for the "Regional Situation Room" could be by telephone line to commercial or university facilities. Simple means to make inquiries should be made possible for any user. It is probable that a number of different programs and computers will be needed.

The concept being considered here is not that there is one big computer program to be developed that can automatically arrive at the best decision,

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PREDICTED ANNUAL
CARBON MONOXIDE
LEVELS (PPM) FROM
TRAFFIC - 1970
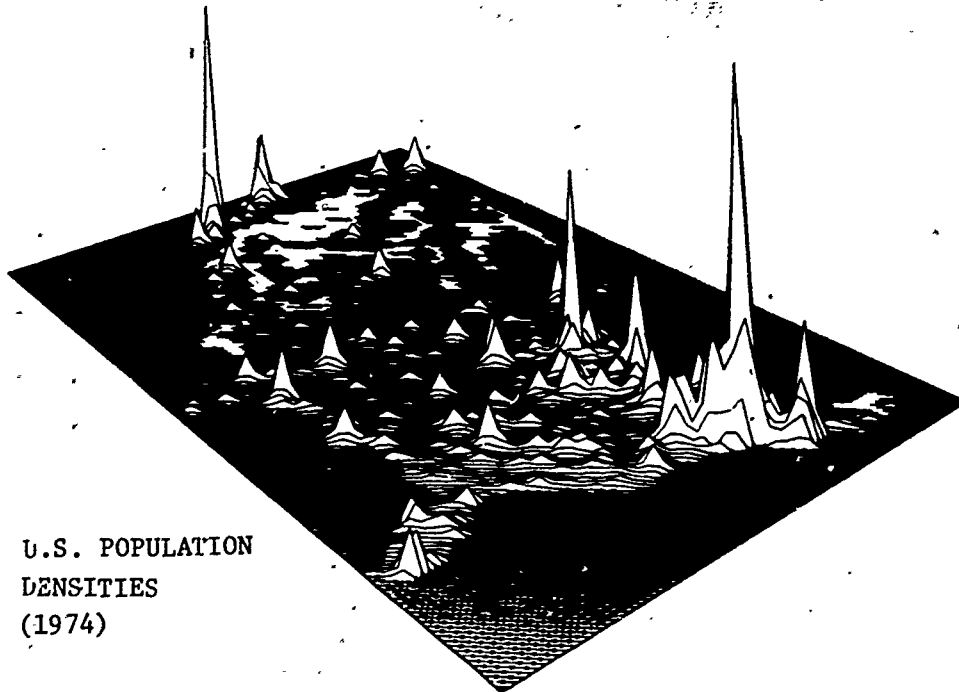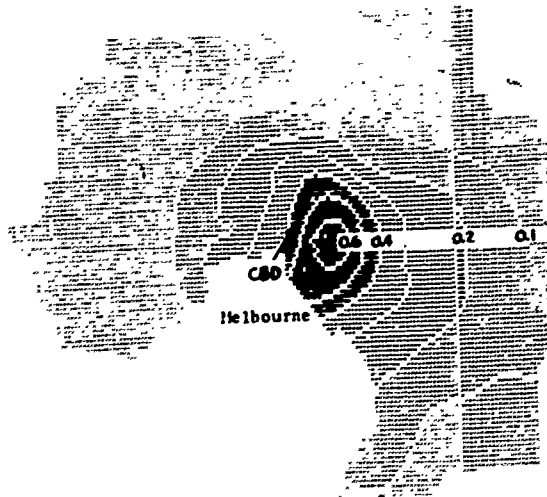
U.S. POPULATION
DENSITIES
(1974)

COMPUTER-GENERATED DISPLAY OF DATA and "instant" graphic
response to viewers' "what if" questions, can be programmed
in black and white or color, animated or static, for a
Regional Situation Room. Ultimately, by means of coaxial
TV, this information exchange could be made available
throughout a region. (illustrations courtesy Laboratory
for Computer Graphics and Spatial Analysis, Harvard
University)

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given the data on any particular conservation or
development problem. Rather, what is proposed is
to use a variety of computer programs to store,
retrieve, compute, and display information--or to
provide other specialized capabilities, such as
to generate computer assisted graphic presenta-
tions, including "walks" through proposed projects.
Programming for graphic displays responsive to
unstructured query of information bases seems
quite important to attempt.

Dealing with different computers and their different
programs, at their present stage of development,
is like dealing with Swedes, Chinese, Italians,
Frenchmen and Englishmen all at once. They may, or
may not, all "understand" the same basic language;
but they are not necessarily individually compatible
(interchangeable). It is therefore necessary to
have persons present to whom specialized questions
could be put. Each would operate the computer
terminals in his own special area of expertise.
In a "Regional Situation Room," information might
be divided into areas such as social, economic,
physical, cultural and political, each with its
own "specialist." If questions requiring especial-
ly powerful computation capacities were asked, the
specialists concerned could turn to a special
terminal for this purpose.

THE ONE YEAR PILOT TEST -
EVALUATION

Typically, persons responsible for organizing a
"new setting" do not provide for a sympathetic,
but independent external evaluation to strengthen
the formation of that venture.[67]   Too often,
therefore, good intentions are subverted by the
stress of the setting's evolution and the ration-
alizings of those directly involved in its success.
Not only do events which might have been prevented
occur, but a learning experience is missed. In
contrast, the ACCESS project incorporated, in the
Design Phase, outside site visits, a national

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[67]/Sarasan, Seymour B., Creation of Settings,
    Jossey-Bass, 1972

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mid-project evaluation and peer reviews. It is planned that the sophistication of the evaluation will grow with the project in the one year Pilot Test, and beyond.

The ACCESS project is attempting to invent a new regional process--the organization of a new setting as a national prototype. ACCESS, therefore, needs to match its actual policies, organizational design, and operations to its goals. For each of these aspects of the Pilot Test, ACCESS proposes independent qualified evaluations by persons of recognized competence as well as sympathy with the purpose of ACCESS.

The evaluation of the Pilot Test would be designed to address several specific but interrelated questions:

(a) To what extent do the goals of the project help to meet the educational, informational and decision-making needs of the Pilot Test "region," or other regions in the country?

(b) To what extent does the overall approach taken promise achievement of the goals?

(c) What are the impacts of the activities undertaken during the Pilot Test, and to what extent do the various components (specific activities, technology, environments, e.g. Regional Situation Room, feedback mechanisms, etc.) of the total process contribute to the achievement of the project's goals? .

(d) How effective can the ACCESS process become, from the perspectives of cost vs. outcome in terms of, for example; the utility to the decision-maker; education; informed participation and hence the influence of the citizen in the decision-making process; and prognosis for the long-term quality of life in a region?

(e) How and under what minimal conditions (funds, physical resources, expertise, people, etc.) is the process transferable or adaptable to

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other regions of the country?

(f)   What changes were effected in the project as
        a result of the feedback, monitoring, and
        self-evaluation mechanisms? To what extent
        were these changes a function of the project
        location as opposed to shortcomings or
        oversights in the overall project design?

(g)   Based on the above, what are the criteria,
        guidelines, etc. for pursuing effective
        alternative or modified approaches? and

(h)   Overall findings, conclusions and recommen-
        dations for further study and action.

The ACCESS project places emphasis on involvement
in "policy dialogue, informed by research, which
makes appropriate use of science and technology
assisted by graphic telecommunications." To
deal with "the complexity of reality" ACCESS
proposes to make use of computer-assisted graphics.
The ACCESS project will use and evaluate in differ-
ent settings, various techniques of verbal, visual
and computer-assisted visual presentations concern-
ing the two selected pilot issues.

The evaluation of the Pilot Test is expected to
provide an independent assessment of the workability
of the ACCESS concept with respect to the design
elements that are involved in the two pilot issues.
The evaluation will be independent in the sense
that evaluators will be researchers from the faculty
of the University of California, Santa Barbara (and
others) not involved in the development or imple-
mentation of the two pilot issues. Such an evalua-
tion is essential if potential grantors are to
consider the allocation of further resources to
broader scale experimentation with the ACCESS
prototype. Such an evaluation is also essential,
if this test is to be used as a justification for
the Santa Barbara community to proceed on its own
with similar projects, or if other communities are
to make use of the ACCESS prototype, as it has
evolved thus far, in designing programs to use the
ACCESS concept to help solve their own policy
problems.

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An interdisciplinary action-research project such
as ACCESS is unlike a basic theoretical research
experiment in one of the natural or physical
sciences. ACCESS is an evaluative research
project.68/ The question, therefore, as Suchman
has said, is not "Is evaluative research scientific?"
so much as "How may evaluative research make the
best use of research designs and techniques?"69/

As the number of contingent factors increases, the
number of variables over which there can be control
decreases. The rigor of evaluation must grow in
ways other than more precise control of isolated
variables. A restatement here of the goal of the
ACCESS project and its basic assumptions will estab-
lish the conditions of the Pilot Test evaluation.

Objectives and Assumptions of the ACCESS Project.

The goal of the ACCESS project is to verify and
demonstrate a multi-faceted process which can
increase the effectiveness of the policy-maker with
regard to actions which affect the quality of human
settlements--the physical, cultural, social and
economic environment of a region. ACCESS assumes
that the most recurring and pressing policy-making
tasks within a region require:

(1)   consideration of complex, interrelated
       and interactive facts, elements, issues
       (including scientific, technological,
       economic, social and political);

(2)   consideration of the long-term as well as
       immediate consequences of decisions concern-
       ing the total "environment" of the region;

(3)   education or self-education of all who take
       part in the policy-making activity;

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68/See pages 6, 56, 69, 124

69/Suchman, Edward A., Evaluative Research, Russell
    Sage Foundation, New York, 1967, p. 85

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(4)   the involvement of an informed citizenry,
      and in different ways depending on the nature
      of the problem or issue;   and

(5)   easy access to data, methods and other
      resources, appropriately selected and
      "packaged" for objective, comprehensive,
      and comprehensible communication.

These assumptions, and therefore the process to be
tested, address policy making in its various phases,
forms and purposes (e.g. planning--urban, regional
development, housing and community development,
transportation, energy [generator siting, power
transmission and distribution, conservation and
demand], land use, and other resource use and
allocation; assessment--technology, environmental
impact; implementation--coastal zone management,
water supply and quality control, air quality
control; communication and education--citizen and
policy maker study of problems, options and impacts
affecting the quality of the total human environment).

The ACCESS process incorporates the exploratory use of:

(1)   structured policy dialogue among individuals
      with different backgrounds and interests in
      order to identify appropriate value-sensitive
      contexts which can help in considering
      regional issues and options;

(2)   interactive computer graphics and other
      visual media, as an approach to effective
      communication about complex policy problems
      in unbiased and interdisciplinary ways;

(3)   creative environments (i.e. the regional
      situation room) to encourage self-education,
      participation and informed input to the in-
      formation base and to the policy making
      process by interested citizens;

(4)   dissemination mechanisms to keep the general
      public and decision makers informed; and

(5)   a variety of methods for feedback and for
      evaluation of the total process and its
      various components.

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Established social science techniques will be used
to evaluate certain aspects of the ACCESS approach
with the public and with decision makers within
the community. The extent to which given informa-
tion flows reach an audience and become a part of
the fund of knowledge used by the public and by
decision-makers in discussing public issues can be
measured by a variety of techniques. These include
attitude surveys and interviews with the general
public, with stratified samples of that public,
special interest groups and leadership groups.

Controls are needed in order to distinguish between
the impact of the ACCESS approach and the flows of
information that take place without ACCESS. The
project will therefore use non-community partici-
pant subjects and study issues for which the ACCESS
approach is not provided.

The following question has been selected as a
priority for examination through the two regional
issues of the one year Pilot Test: What are the
impacts of graphic communications combined with
policy dialogue?

The principal assumption of the ACCESS process is
that graphic displays will have an impact on the
level and quality of information held by the
general public and by decision-makers. Such
displays will be provided by various techniques:
television productions, graphic presentations to
small audiences both in special interest group
settings as well as in the Regional Situation Room
set aside for that purpose. While it is impossible
to control for extraneous influences, the assump-
tion is that the ACCESS approach to information
communication will make a significant difference

70/This description draws upon both ACCESS project
and University of California, Santa Barbara
evaluation designs. The latter was contributed
in December 1975 under the direction of Dean L.
Mann, chairman of the UCSB Political Science
Department.

in knowledge, understanding and perspective on
vital public issues. That difference should be
subject to measurement.

Some communication flows will be directed at the
general public through broadcast television, through
cable television and through a two-step process
from leaders of organized groups to the membership
of those organizations. Survey research will be
the principal instrument for obtaining information
on the levels of information, understanding and
attitudes before and after use of the ACCESS
approach. Before the ACCESS communication process
begins, one survey will be made of a random sample
of the general population of the South Coast area.
This survey will provide a baseline for measure-
ment of change upon the application of the ACCESS
techniques.

Not all ACCESS techniques will reach the entire
population, however. Some graphic presentations
will be made to specific groups, and questionnaires
will prove useful to measure changes caused by
specialized techniques.

ACCESS will use several methods in the evaluation
activity, with emphasis on flexibility, creativity,
accountability and suitability of the evaluation to
the nature of the evolving process, the complexity
of the issue and the inherent requirement for a
"systems" approach to assessment and forecasting.
The methods for evaluation will be drawn from those
used in traditional research, technology assessment
and general systems planning.

Specific research hypotheses to be investigated
include:

   Graphic display techniques (e.g. simulation
   via physical models, animation, computer
   generated imagery, etc.), combined with
   policy dialogue increase:

   A. Understanding of issues, options and impacts;
   B. Involvement of policy makers and the public;
   C. Perception of the utility of being able to
       interact with graphically displayed informa-
       tion combined with policy dialogue.

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The "one-shot" survey is a method which might
be used to investigate the impacts of graphic
communication combined with policy dialogue,
and to test the hypotheses outlined above.

The basic reference for the one-shot\survey
is Campbell and Stanley's <u>Experimental and
Quasi-Experimental Design for Research</u>,
Chicago, 1963.

Such a survey is a compromise between controlled
experimentation and simple survey research.
Controlled experimentation attempts to control
all the variables, impossible in this sort
of social circumstance. Simple survey research,
such as that which Gallup and Harris perform,
does not attempt to take into account
exogenous information inputs of the moment, the
history effects, which can skew a whole survey
at any given time.

The one-shot survey, to oversimplify, does
its best to account for history effects and
to identify and deal with variables. It
is self-conscious about how survey questions
are put and the nature and control of the
social process in which they are used.
The one-shot survey skillfully sets out to determine
what the <u>correlations</u> are in a given circumstance.
It doesn't <u>prove</u> anything. It attempts to <u>indicate</u>
clearly.

Another strategy will be adopted to evaluate the
impact of the various components of the ACCESS
approach. Essentially this will involve presenta-
tion of information to student groups on the
University of California, Santa Barbara campus,
using alternative presentation techniques of
the ACCESS project, as well as other more
traditional approaches to communication, especially
written materials. Measurements of differences
of levels of information, understanding and
changes of attitudes will be possible under highly
controlled conditions. Students in the environ-
mental studies program at UCSB will be suitable
subjects, and there are excellent experimental
facilities available on the campus.

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Because much of the communication will be directed
toward the leadership of the community, it will be
necessary to conduct before and after interviews
with a sample of this group. To the extent
possible, assessments will be made of movement in
information levels, and attitudes on both the two
issues selected for ACCESS techniques and for the
ACCESS project itself.

The explorations with the ACCESS project in the
Santa Barbara community do not include study or
evaluation of decision-making processes, although
the focus of the proposal is on the need for a
regional approach which emphasizes broad environ-
mental and long-term consequences. Nevertheless,
the ACCESS project does stress the potentiality for
increasing community consensus on issues and
facilitating the resolution of community conflict.

An additional strategy would involve a monitoring
effort to determine the response of individuals in
various forums where groups with presumably oppos-
ing viewpoints interact. Trained observers would
monitor the extent to which issues are narrowed or
broadened, the levels of intensity of feeling, and
the degree of polarization.

Evaluation Methods

To summarize, the evaluation will report on what has
been learned from the Pilot Test about the ACCESS
project policies, organization and operation and
about the impact of the ACCESS process policy
dialogue combined with graphic communications. In
addition to a project overview by a national
evaluation panel, the following will be undertaken:

(1) Population Interviews: personal interviews
     with a sample of residents at two points,
     before and after ACCESS intervention.

(2) Leadership Interviews: approximately 100
     interviews conducted from a relevant sample
     of representatives from organized segments
     of the population.

(3) Controlled Experiments: paid student
     subjects tested for response and information

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level, involving possible use of UCSB lab facilities.

(4) <u>Monitoring of Group Meetings by Participant Observers</u>: skilled behavioral scientist observations at the time of ACCESS policy dialogue supported by graphic techniques.

The complexity of this evaluation does not negate the need for it. Quite the contrary. An applied social sciences policy research project as concerned as the ACCESS project is with complex information handling and the involvement of policy makers, would seem ill-conceived if it did not propose a maximum effort to understand the impacts of its efforts to communicate. But it will take the 3-5 year Regionwide System Research Demonstration and Verification to judge specifically performance of the ACCESS process for criteria such as:
- effectiveness in relation to solving a policy problem
- cost effectiveness for scope and scale of services offered
- transferability to other regions
- degree of local conflict - cooperation - consensus
- evolution of the regional process
- changes in individual visual perception and thought

THE 3-5 YEAR REGIONWIDE SYSTEM RESEARCH DEMONSTRATION

Purposes

The ACCESS project, upon completion of the one year Pilot Test, proposes to initiate a 3-5 year Region-wide Research Demonstration and Verification. The purposes of the demonstration would be: to test the ACCESS project prototype of the "voluntary association" mentioned by De Tocqueville, updated to this fast changing Technological Era; to integrate science with other elements of society; to develop access for people to expertise and to each other which recognizes the powers of science and technology and guides them with greater awareness of human values; to strengthen the capabilities of citizens and the independent sector in the process of regional policy-making; and to evolve a process

of analysis, perception and communication of the consequences of pending decisions, and possible alternative futures, which is as dedicated to long range outcomes as most present institutions are to the short term.

Functions

The functions of this 3-5 year Research Demonstration would be: to foster policy dialogue on a regional scale; to serve as a clearing house for reference sources, information and participatory processes; to stimulate the perception and exploration of whole ranges of possibilities and their future conse-quences without taking policy positions; to facilitate the experience and mastery of the dramatic technology of modern graphic telecommuni-cation, and demonstrate its ability to make the complex and intangible more comprehensible to decision makers and lay citizens; to educate concerning the unique resources of the region, its people and their values; to develop a regional sense of community and awareness of the inter-relatedness of forces for change acting simul-taneously at regional, county, state, national and international levels.

There is no estimate as yet of the total cost of the ACCESS analysis/synthesis/communication process for regional policy making under discussion here. Important questions have yet to be addressed. What technological systems are available and feasible now? What may become available? How extensively might they be used? What are the benefits to policy making? What criteria are to be used to evaluate costs and benefits? (This should include assess-ment of the waste and social damage prevented by the ACCESS process.) Who might share use and cost of facilities (for example: television companies, government, research, businesses, schools and univer-sities, civic groups, etc.)? At what scale of region would which services be cost effective? When?

To answer such questions is work for the 3-5 year Regionwide System Research Demonstration.

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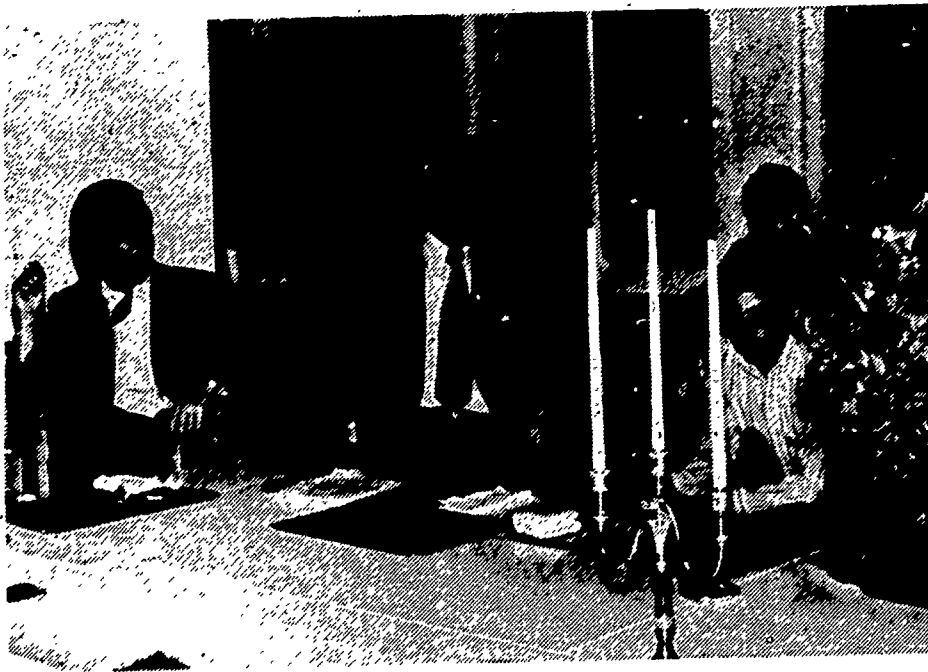
ACCESS ADVISORY BOARD, FIRST MEETING, October 25, 1974. At
the conclusion of the Design Phase, ACCESS members selected
a 29 person policy board. Dan Wormhoudt, University of
California, Berkeley, ACCESS staff consultant, at left, with
board members William Wittausch, Citizens Planning Associa-
tion, and Larry Padway, community activist, Isla Vista.
(photograph by Randall Smith)

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VI. Appendix

VI. APPENDIX

ACCESS PUBLICATIONS AND VISUAL PRODUCTIONS

RECONNAISSANCE

The following two reports were contracted investi-
gations for The National Science Foundation, which
led to the ACCESS project Design Phase.

  Ewald, William R., Jr. ACCESS, The Santa
    Barbara Regional Pilot Process, July 1973
    (54 pp.)

  _____ Graphics for Regional
    Policy Making, A Preliminary Study, NSF,
    August 1973 (65 pp.)(available through NTIS)

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BASIC REPORTS

Ewald, William R., Jr.   Information, Perception &
Regional Policy. ACCESS Project Design
Phase, Final Report to the National Science
Foundation, July 1975 (210 pp.)

_____   ACCESS DESIGN PHASE,
Report to the South Coast Region, November
1974   (84 pp.)

_____   (et al) ACCESS Design
Phase Documentation, Volumes A & B, November
1974   (500 pp.)

BROCHURES

Ewald, William R., Jr.   "Telecommunication –
to Facilitate Regional Policy Making."
(paper for the IEEE International Conference
on Communications, June 16–18, 1975
San Francisco)   (4 pp.)

_____   (et al) ACCESS Q:
Who Needs It?, December 1974 (14 pp.)

_____   (et al) Newsletters,
Issues 1 and 2, February & March 1975
(8 pp., 16 pp.)

_____   "Choices and Conse-
quences – Rationale for ACCESS,"
(paper for The Center for the Study of
Democratic Institutions" dialogue,
April 1, 1974)   (5 pp.)

VISUAL PRODUCTIONS

Ewald, William R., Jr.   (Barbara Walker,
Jeffrey Holyrod, et al)
Language A and Language B. Describes
science/humanism approach of ACCESS
project. (7-1/2' production; 16mm
filmed scenes of ACCESS meetings,
stop motion animation, voice-over
added to 3/4" videocassette; dubbed

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onto 16mm film positive.)   June 1974

_____ (et al)   ACCESS Q:
Who Needs It?   Three segments: Testimonial
statements of citizen leaders, selected
computer assisted graphic film, edited,
and a "Meet the Press" format re ACCESS
policies.   (30' production by KEYT on 2"
quad videotape; transferred to 3/4" video-
cassette)   October 1974

_____ (et al)   Same, but
just computer assisted graphic film
edits (11' 16mm film positive)   October 1974

_____ (et al)   Briefing On the
ACCESS Project (20 overhead projector
slides)   March 1975

_____ (et al)   Donald Sheldon,
Detroit Metropolitan Fund and William Ewald
in a dialogue-interview on the "Common Ground".
Show about the transferability of ACCESS
graphics.   (30' production produced by WTVS
on 2" quad videotape; transferred to 3/4"
videocassette)   May 1975

RESOURCE PAPERS

Resource papers of the ACCESS Design Phase (included
in Documentation Volumes A and B) are listed below
by the study groups for which they were
prepared.

Summary

   W. Ewald (1-10), 14 pp.

GROUP ONE - Data and Information

   Six UCSB Students Survey Sources of Data (1-1)
                L. Rossi, 6 pp.

   ACCESS Information Services (excerpted) (1-2)
                R. Hayes, 31 pp.

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(full working paper)   (1-2a)
                    R. Hayes, 64 pp.

Summary of June 1 Workshop (1-3)
                    B. Walker, 12 pp.

ACCESS and Data Referencing (1-4)
                    R. Hayes, 22 pp.

Regional Library Resources (1-5)
                    W. Ranill, 9 pp.

Los Padres National Forest (1-6)
    (An example of a Regional Source of
    Data and Data Processing)
                    L. Rossi, 19 pp.

GROUP TWO - Research Resources

    ACCESS Space Survey (2-1)
                    K. McDaniel, 4 pp.

    Organization and Expertise Letters & Forms (2-2)
                    W. Ewald & B. Walker, 3 pp.

    Computer and Communication Letters & Forms (2-3)
                    W. Ewald & T. Ferguson, 4 pp.

    Example of a Special Survey for Regional
        Talent (2-4)
                    W. Ewald, 3 pp.

    Research Resources (2-5)
                    B. Walker, 21 pp.

    Computer Facilities Survey (2-6)
                    K. Kelley and F. Bellamy,
                    11 pp.

GROUP THREE - Relation to General Planning

    Survey of Current Planning Efforts in Santa
        Barbara County (3-1)
                    L. Rossi, 72 pp.

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City Planning and Environmental Law (3-2)
            K. McDaniel, 5 pp.

Communities, Neighborhoods and Electronics
    (3-3)
            L. Rossi, 4 pp.

Issues and ACCESS (3-4)
            D. Wormhoudt, 29 pp.

GROUP FOUR - Organization

The Organization of the 3-5 Year Pilot Test
    (4-1)
            W. Ewald, 8 pp.

GROUP FIVE - Broadcast & Cable TV

ACCESS Proposes Two-Way Television (5-1)
            W. Ewald & B. Walker, 13 pp.

Group Dialogue Stimulated by Electronic
    Polling System (5-2)
            W. Wittausch 7 pp.

ACCESS Produces a Videocassette (5-3)
            B. Walker, 10 pp.

Selected Films (5-4)
            V. Comer, 5 pp.

GROUP SIX - Computer Systems

Computer Systems Under Consideration (6-1)
            A. Klimeck, 31 pp.

Grids, Polygons, Latitudes-Longitudes Workshop
    (6-2)
            L. Rossi, 11 pp.

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Since 1963 he has headed his own Washington-based
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