**Public Information Dissemination
in the
State of Washington**

Public Information Dissemination in the State of Washington

by

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16. Abstract

Methods of disseminating public information by seven Washington State agencies and services*
are reviewed and evaluated in light of cost effectiveness and public information dissemination
purposes and objectives. Alternative procedures and technologies are reviewed with a view
toward determining if changes can be made that will enhance agency opportunities to meet the
public information dissemination purposes and objectives. Conclusions point to the need for em-
phasis changes, effort consolidation, and adoption of automated systems to increase informa-
tion output and effectiveness without increasing labor intensive operations. In arriving at these
conclusions, public and agency needs are examined, objectives are defined relative to those
needs, and criteria are established for evaluating alternatives.

The report includes descriptions of individual and multiagency benefits, and means to coor-
dinate information processing among the agencies and services. An analysis is presented, in-
dicating areas and types of potential operating cost savings, improved informational usage,
potential travel related energy efficiencies and better use of state's resources.

The report concludes with a recommendation for a pilot project that could be the prototype for a
statewide multiagency electronic information dissemination system. The project would include
representative components of the statewide concept. Steps leading to its implementation are
also identified.

*Included are: Department of Transportation, Department of Commerce and Economic Develop-
ment, Department of Fisheries, Department of Game, Washington State Parks and Recreation
Commission, State Patrol and Emergency Services

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Executive Summary

Introductory Statement

The focus of this report is on travel information (especially motorist) and travel related information provided by the State of Washington. This study determines whether the information being disseminated to the public needs improvement in terms of timeliness and adequacy. Further, the report investigates alternative means to disseminate travel related public information throughout the state, and presents a plan for implementing those means that best serve agency goals and objectives.

The following state agencies were identified as those providing the public with information that can affect travel efficiency.

Washington State Department of Transportation
Department of Commerce and Economic Development
Department of Fisheries
Department of Game
Washington State Parks and Recreation Commission
State Patrol
Emergency Services

Among the participating agencies, the Washington State Department of Transportation, WSDOT, and the Department of Commerce and Economic Development occupy a leadership role.

As stated above, the information provided can affect travel efficiency; but in many cases, to make the best use of energy consumption and state resources, travelers must rely on a variety of sources through an assortment of unrelated distribution channels.

The public information departments of the seven above mentioned Washington State agencies were interviewed to determine agency requirements, responsibilities and responses to public information needs. This review determined that the agencies themselves are frustrated by the knowledge that the current public information dissemination programs are not able to meet the public need. They are not providing the level of guidance, warnings and general assistance to either residents or visitors of the state that they themselves deem necessary. In addition, there are several new responsibilities and associated objectives that they must now face.

These agencies are now viewed as having the responsibility to minimize travel, while at the same time making travel more energy efficient, to provide better recreational safety, to decrease the number of violations of fish and game law, and to encourage more, as well as more efficient, use of state resources.

In addition, the Department of Commerce and Economic Development has new and vital charges to increase tourism through increased advertising of state resources. To support this effort, DCED has undertaken an extensive promotional and advertising campaign. The success of such a campaign is dependent upon the kind of follow up information dissemination available once visitors arrive in Washington State. Using existing procedures, dissemination will consist principally of increased telephone information and additional printed materials.

The need for a greater volume of comprehensive information dissemination and more direct targeting to specific audiences is apparent. Yet state agencies are faced with a severe problem. While being asked to accept these new information dissemination requirements, they are at the same time being told to hold down operating costs. In the face of budget constraints it is difficult to meet even the historical information dissemination needs.

Conclusions

Four specific opportunities were found. **First,** an expansion of information dissemination is needed. The demand for some agency publications is far greater than the number being supplied. Many of these publications are good sources of basic information, such as the State Highway Map and Guide to Parks. In addition, an expanded use of toll free telephone numbers for such services as pass condition reporting, a reinstitution of the salmon hot line, or an expansion of the popular "Sno-Line" would help. Also, for information which changes frequently, increased use of broadcasting would be beneficial, including the localized low power radio broadcasts of Highway Advisory Radio (HAR).

Expansion of printed materials will satisfy some information dissemination needs. To maximize the DCED media and promotional campaigns, there must be printed information available for those thousands of visitors who enter our state. State agencies are planning on the dissemination of some materials, but no out of the ordinary program is planned. The DCED has made a major commitment to increase public access to telephone and printed information. People outside of or within Washington State can call a toll free number to have their questions answered and have printed materials sent to them. DCED's access to other state agency information is general and they will not be able to deal with up to the minute or complex details. Dissemination through printed information and telephones reaches a point of diminishing returns if it does not become part of an information system. A system which can easily respond to generalized and specific details of subjects with up to the minute, complete information is necessary to serve the public and provide a return on investment for the state.

The second opportunity is to shift the emphasis of information toward the point of origin of the user decision. Efficient travel information dissemination assists the public in making better decisions by providing the necessary information at the right time. Information is needed either to inform about conditions related to the travel objective or to travel itself. There are three opportunities for disseminating information to travelers: (1) before they depart (origin), (2) as they travel (enroute), and (3) when they arrive (destination).

Travel information is most efficient if it is received at the point of origin. Consequently, the recommendation is to concentrate on providing much more timely, accurate point of origin information.

The third opportunity is to consolidate agency information dissemination efforts. All agencies involved in this project provide travel related information. The value of each agency's information is enhanced when it is provided in conjunction with the information from other agencies. For example, a person planning a trip needs to know routes of travel, road conditions and, in many cases, accommodations, events and points of interest information. Currently, this type of information is provided by six different state agencies. The public must contact each agency for their information.

Agencies could still continue to function somewhat independently while providing some consolidated information. For example, each agency could develop its own data. then through consolidation of printed, telephone and advanced electronic techniques, could supply the public with answers to specific requests.

The fourth opportunity is the use of electronic audio and video information dissemination. The use of electronics has much potential in providing consolidated, accurate information at an economical cost. Therefore, much of the detail of this report will concentrate on whether and how the use of electronics is feasible for the state.

Briefly summarized, the following points were found:

1. The information currently being disseminated to the public needs to be consolidated, updated and changed on a regular basis.

2. Current methods do not have the flexibility required to meet these demands.

3. Costs to use current dissemination methods to meet information updating requirements is prohibitive.

4. New electronic technologies allow for cost efficient updating, changing and consolidating of information.

5. New technologies allow for fuel savings by reducing trips made unnecessarily because of inadequate, or incorrect information.

Recommendations

This report recommends that a pilot project of an electronic information system be funded. This project will test the validity of electronic information in fulfilling the state's public information needs.

It is also recommended that the state undertake a feasibility study to determine the likelihood of a statewide owned and operated communication network. The network's purpose would be to satisfy not only public information requirements, but state operating communication needs. It is presently estimated that the state spends 12 million dollars a year for long distance service. It is expected that a state-owned or tightly managed, leased network will not only expand capacity, but reduce costs as well.

General

This report explores the nature and content of the information now being disseminated by several of Washington State's public agencies, and evaluates whether the current information content and methods of dissemination used meet the information dissemination purposes and objectives of these agencies. There are two pre-defined primary objectives for these agencies. The first is to evaluate ways to minimize operating expenses. The second is to evaluate ways to provide the kind of information dissemination that will maximize efficient use of energy by travelers in the State of Washington through the reduction of unnecessary driving associated with inadequate, inaccurate information. In addition, the report's research effort revealed several other related agency objectives which must also be considered.

In particular, the ways to minimize operating expenses have to be evaluated in light of agency information dissemination purposes, objectives, and responsibilities. The results of the research conducted in this study (see Appendix) show that a number of Washington State agencies are faced with a deterioration in their ability to meet the public needs for which they are responsible. Consequently, this report first concludes what kind of changes could move Washington State agencies closer to fulfilling these reponsibilities and associated objectives. The report's second stage is then to evaluate the relative benefits of these possible changes, in order to find the change path most likely to minimize operating expenses, while promoting energy efficiency and the other agency objectives and responsibilities.

The potential changes that are discussed in this report will affect agency operations for several years. In addition, as the Research Report (see Appendix) shows, the need for change is immediate. Consequently, this study has attempted to define a program that can be implemented quickly, while the relative benefits are considered over a longer period.

Procedures

The following agencies participated in the process of reaching the conclusions offered in this report and are also the agencies that will participate in any further study and/or subsequent implementations related to these conclusions:

Department of Transportation (WSDOT)
Department of Commerce & Economic Development (DCED)
Department of Fisheries (Fisheries)
Department of Game (Game)
Washington State Parks & Recreation Commission (State Parks)
State Patrol (SP)
Emergency Services (ES)

While a more in-depth research effort involving public participation might have been desirable, this was beyond the work scope and budget for this project. It should be noted, however, that those persons participating in the survey process are trained professionals who deal with addressing the information needs of the public on a daily basis. It is their business to know what kind of information the public needs.

To begin the process, a review was conducted among the public information departments of the seven participating agencies. This review had four purposes:

1. To identify how public information dissemination needs are currently being handled.

2. To identify agency opinions regarding to the adequacy or inadequacy of current public information dissemination.

3. To establish what, if any, changes or additions to agency objectives were needed to enhance public information dissemination.

4. To identify how much agencies were currently spending for public information dissemination.

The Research Report also provides the following information about current operations:

1. The types of information being disseminated.

2. The methods used for dissemination.

3. Problems being encountered by agencies.

The review process consisted of a survey questionnaire which was administered in an informal manner to the Public Information officer, or other designated official from each of the participating agencies. The informal approach encouraged expansive discussion in each area. Samples of each of the information pieces distributed by an individual agency were collected and discussed with the agency representative.

A summary of the research results is contained in Chapter II, Current Methods of Providing Information to Motorists, and the full Research Report is contained in the Appendix.

Alternative methods to meet agency purposes and objectives were examined and are explained in Chapter 3, Alternative Systems. The remaining chapters examine the costs, benefits, and considerations of electronic information systems, specific applications to Washington, and funding.

Summary Statement of Existing Situation

Washington State agencies are concerned about meeting their public mandate to provide timely and accurate information within their respective areas of responsibility. Concerns are being raised by the agencies themselves. Although no study was conducted with regard to public perception of how well the agencies are doing, knowledge by the agency professionals of shortcomings suggests the possibility of considerable public dissatisfaction. In addition, shortcomings are apparent in the areas of enhancing public utilization of state resources, creating energy efficient travel and promoting the state. While these shortcomings will not necessarily create serious public dissatisfaction, they represent significant missed economic opportunities for the state. When you consider that travel related income is Washington's third largest industry, the importance of efficient information can be appreciated.

Primary among those raising communication concerns is the Department of Transportation, WSDOT. Their management of the state's highway system affects an almost universal statewide population base: all users of the major travel corridors (most residents and nearly all out of state visitors). The WSDOT charge includes the long standing critical issue of highway safety, and the newer, increasingly crucial issue of energy conservation. With travel running into the millions of miles, WSDOT has considerable responsibilities to meet. Local and commuter traffic needs such as busy hour traffic controller information and busy hour emergency bulletins, have substantial coverage, and were not identified as the main areas to be addressed. The main focus of this report is related to energy efficiency and better utilization of state resources from statewide travel.

In addition, the Department of Commerce and Economic Development recognizes the need to better communicate state benefits and resources, not only to promote better utilization of state resources by residents of the state, but also for encouraging tourist use.

Other agencies managing other state facilities and resources also have responsibilities over large population groups, and many of the issues they are concerned with also are critical: public safety, adherence to regulations and ordinances, energy efficiency, and effective use of resources. The separate responsibilities of WSDOT and the other agencies, when considered together, amount to a highly significant impact on the people of Washington State and the state itself.

Public information requirements related to these responsibilities are virtually as critical as the responsibilities themselves. For the public to conduct themselves in a safe and lawful manner, for people to expend energy resources most wisely, for them to make the best use of public facilities, people must first know what regulations are in effect, what practices are recommended, and what opportunities are available to them.

Enforcement and supervision, necessary to uphold instituted provisions, are in turn largely dependent upon public information for their effectiveness. Stipulations not well communicated or sufficiently publicized leave many issues open to question that would otherwise be easily settled, and in more severe cases allow what should be clear violations of law to become defensible. A sample case in point is revised fishing restrictions not available to the fishermen within the time frame of the regulation.

To these ends, promoting and reinforcing preferred public actions, Washington State agencies are engaged in as comprehensive a set of information programs as current individual budget allocations will allow, using traditional methods of production and dissemination. The shared concern is that not enough is being done now, and future information demands will create further deficiencies.

The Timeliness Issue

One aspect of this report's conclusions is that the application of electronics and a computerized, networked information system may be the best answer to agency information dissemination needs. If the decision is made to proceed with this computerized, networked system, there appear to be some significant advantages to acting quickly because of the network considerations. In addition, the time required to develop a statewide network is significant, and the need for better dissemination is immediate. Although some of the need can be significantly addressed with a computer system without a network, such a system would fall far below the relative benefits of a networked structure. There exists a definite limit to the number of frequencies or communicator channels that may be assigned. If the state were to act too slowly in its move for a public information network, it is possible that the majority of state informational paths would depend on the good will of sources beyond the state's control. For example, most available TV and radio frequency assignments have already been made within the state.

Timely coordination with the FCC can reserve for the state the most optimum frequency assignments for its use, and perhaps sub-assignments. A delay, on the other hand, may find these assignments committed to other users.

Current Practices

An Overview

Much research has been done regarding travel related information dissemination. The reference section of this report lists some of this research. Most of the results show that, currently, motorist and visitor information programs throughout the U.S. are primarily devoted to enroute dissemination. Efforts to improve these programs have been focused on augmenting official highway signing and providing information centers along highways, continuing the enroute emphasis.

Recent studies have stressed the need to establish in each state a comprehensive system for providing information regarding goods, services, facilities, and significant attractions—in addition to directional and regulatory information. The recommendations offered throughout a variety of reports consistently favor more extensive signing programs, and are consistently aimed at fulfilling information needs during travel.

An FHWA report, No. RD-80/010, "Motorist Needs For Services Information On Interstate and Federal-Aid Primary Highways (see References section of this report) led to the conceptualization of a prototype goods/services/attractions information system. The basic design intent was to satisfy travelers' information needs, using existing information transmission techniques. The system is characterized as multimedia (not relying on a single transmission technique) and incremental (handling different information levels by different techniques). These characteristics are important to the effectiveness of a travel information system, according to a 1979 USDOT Task Force study.

The prototype system is comprised of four information components:

1. General Service Signs—generic identification
2. Specific Service Signs (Logo Signing)—brand information
3. Official Business Signs—standarized and authorized for highway locations
4. Information Centers

It is stated that this recommended system would not satisfy all information needs; the differences would have to be made up by the use of hard copy information sources for both pre-trip planning and in-trip use. The system relies heavily on signing and posted displays. The recommended information centers—unmanned versions—are collections of business signs, advertising posters, and printed maps housed in special display structures, buildings, or kiosks.

Unmanned information centers along interstate and primary systems have been established in several states, including California, Oregon, and Vermont, whose systems have been the subject of a number of studies. These installations typically are located in safety rest areas, and offer availability and directional information regarding a wide range of goods, services, facilities, and travel attractions in the general regions.

The State of Washington has placed travelers' information display frames in all of their 37 interstate rest areas. WSDOT, the agency in charge of this information, has experienced some difficulty in maintaining and updating the information units in these unmanned locations.

A number of states, including the State of Washington, provide manned information centers. These centers are typically situated near points of entry and serve mainly as visitor orientation and welcome centers. The manned facilities reportedly have been successful in this application.

Information Needs

By examining a cross section of documentation regarding motorist and travel information, it becomes apparent that there are three basic categories of information needs:

1. Routing
2. Goods & Services
3. Destinations

Within the above categories lie the recognized assortment of information types—directional, regulatory, advisory, etc. Traveler Considerations within the three categories are listed in Table 1.

Primary Travel Needs Listing		Table 1
Routing	**Goods & Services**	**Destinations**
Highways & Connecting Roads	Types	Descriptions
Transportation Alternatives	Availability/ Accessibility	Availability/ Accessibility
Rest Areas	Conditions	Conditions

Table 1: Traveling Public—Primary Travel Needs Listing

Comprehensive travel information requires a wide array of topics related to the subjects listed above. Tables 2, 3 and 4 include lists of topics compiled from previous studies and other literature regarding travel information requirements. Topics are arranged under subject headings.

Routing   Table 2
Participating Agencies: DOT, SP, ES

Highways & Connecting Roads	Transportation Alternatives	Rest Areas
Locations	Locations	Locations
Transitions	Routing	Facilities
Conditions	Schedules	Information
Physical	Fares	
Weather	Delays	
Status		
Delays	For:	
Closures		
Features	Ferries	
	Public Transit	
Alternatives	Intercity Bus	
	Intercity Rail	
	Carpool/Vanpool	
	(Park & Ride)	

Table 2: Information Requirements for Routing

Goods & Services   Table 3
Participating Agencies: DOT, DCED, State Parks, SP, ES

Types	**Availability/ Accessibility**	**Conditions**
Routine	Location	Types
Fuel	Distance	Brands
Food	Travel Time	Quality
Lodging	Return	Hours
Camping		Prices
Telephone	Contacts	Credit Cards
(communications)		(acceptance)
Information	Alternatives	Handicapped
		(access/facility)
Emergency		
State Patrol		Response
Police		
Medical		
(hospital)		
(ambulance)		
Towing		
Repair		
Fire		
Supplementary		
Laundry		
Cleaning		
Post Office		
Bank		
Etc.		

Table 3: Information Requirements for Goods & Services

Destinations   Table 4
Participating Agencies: DOT, Fisheries, DCED, Game, State Parks, (ES)

Descriptions	**Availability/ Accessability**	**Conditions**
Types	Location	Weather
Scenic	Distance	Regulations
Historical	Travel Time	Fees
Rereational	Return	Hours
Parks		Availability
(include U.S.)	Contact	(vacancy)
Urban Centers		(reservations)
Rural Communities	Alternatives	Licensing
Campsites		
		Events
Facilities		Activities
Lodging		(level, quality)
Camping		
Goods		
Services		
Events		
Activities		
Transportation		
Attractions		

Table 4: Information Requirements for Destinations

Current Information Emphasis

In line with current practices nationwide, most travel related information in Washington State is disseminated enroute and at destinations. The emphasis is on directional and advisory routing information, supplemented with identification of goods and services along major corridors. Some directional, regulatory, advisory, and promotional information is available for pre-trip planning (at trip origin) through printed maps, brochures, telephone information services, and broadcasts. (See examples in Figure 1 below.)

Examples of Public Information Materials
From Five State Agencies

Figure 1

Game   DCED   State Parks   WSDOT   Fisheries
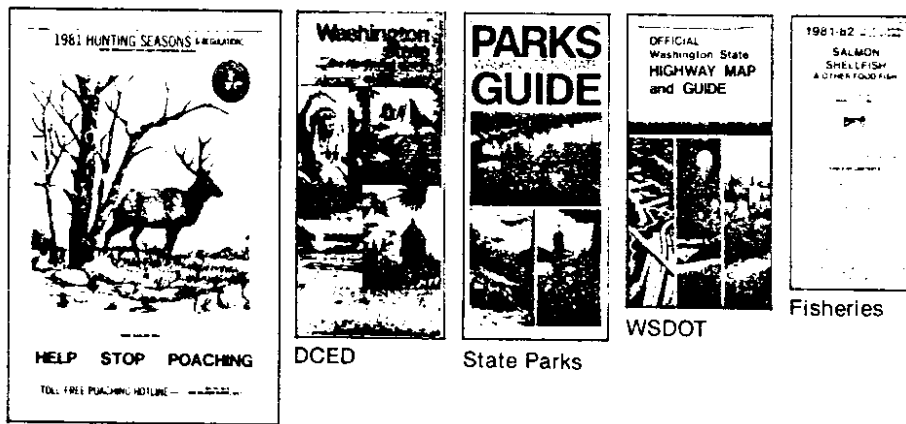
Three zones of information dissemination are shown in Table 5. Listed under the zone headings are the categories and types of information most emphasized within each zone, and the agencies most actively involved in providing that information.

Current Information Emphasis   Table 5

Target Zones:	Origin	Enroute	Destination
Categories:	Routing, Destination	Routing, Goods & Services	Goods & Services
Types:	Promotional DCED, State Parks	Directional, Advisory FHWA, DOT, SP	Regulatory Fisheries, Game, State Parks, (SP)
	Directional, Advisory DOT, SP		
	Regulatory Fisheries, Game, State Parks		

Primary
Area of
Emphasis

Types and Methods of Information Currently Being Disseminated

The current state agency public information situation is detailed in the Appendix. A summary of the situation is presented here as a point of departure for the evaluation and investigation of possible alternatives that follows.

Among the participating agencies, the types of information offered range from marketing persuasion to emergency assistance. The principal headings are listed with corresponding categories in Table 6. Note that some categories fall under more than one heading. These entries are not strictly duplicated but reflect implicit variables of emphasis, manner of presentation, or (agency) source.

Types of Information Offered By   Table 6
Seven State of Washington Agencies

1. Promotional	recreation, sightseeing, tours, facilities, goods and services
2. Directional	routing, locations, road conditions (and other selection criteria)
3. Regulatory	travel-related, activity-related
4. Advisory	weather, road accessibility, availabilities (of resources or facilities)
5. Safety	weather, road conditions, other travel/ activity-related hazards, emergency procedures
6. Assistance	motorist, other travel-related aid, emergency services
7. Transportation	public-multimodal (especially ferry system)
8. Goods and Services	locations, facilities, availabilities/ reservations

The entries in Table 6 form a comprehensive list of information types needed by travelers—especially those traveling across the state or to remote areas, or who may use state facilities/resources while traveling, or who may combine state regulated activities with their travel. The cross section of state agencies contributing to the list accounts for its comprehensiveness. Adequate traveler information coverage requires this kind of distributed input. Multiagency contributions are indexed in Table 7. Three types of symbols indicate varying degrees of contribution.

Information Types Table 7

Agencies

	DOT	Fisheries	DCED	Game	State Parks	SP	ES
Promotional			■	⊐	●		
Directional	■	⊐	●	●	●		
Goods & Services	●		●		■		
Transportation Alternatives	●						
Regulatory	⊐	■		■			
Advisory	●					●	⊏
Safety	●			⊐		■	●
Assistance					⊏	⊐	■

● Regular   ■ Emphasis/   ⊐ Conditional/
    Practice   Specialization   Limited

The picture then, is that of at least seven state agencies contributing variously to eight types of traveler information.

Product and Content

The current information product is similar among all the agencies. Traditional forms are generally used, with a heavy reliance on printed matter. There is some audio (voice) communication, using telephone information operators and limited applications of recorded announcements over Highway Advisory Radio (HAR). Printed materials include pamphlets and brochures, press releases, and paid advertising. Within the current materials published by the agencies for direct public distribution, there are approximately 600 pages of text, 100 maps, 250 photos, and 75 charts and tables. Fixed signing is prepared and installed by several agencies, most extensively by the DOT in their highway/motorist information program.

WSDOT Highway Advisory Radio System, installed in 1978, enables motorists to tune in the 1610 KHz frequency on their regular AM radios and receive information regarding roadway conditions on Snoqualmie Pass. A remote controlled low power broadcast transmitter located near the highway, sends continually updated recorded driving information. WSDOT maintenance staff record brief reports for broadcast on the HAR transmitters.

The HAR system is designed to supplement the Sno-Line telephone service, which provides pre-trip pass information. Updated information is provided at North Bend and Cle Elum on either side of the pass through HAR.

Highway Advisory Radio, a specific application low power radio (LPR), provides audio information to listeners within a limited coverage area, typically a one or two mile range. HAR broadcasts information to motorists, generally regarding highway traffic and road conditions. It is an FCC licensed localized one-way service operated over one or both of two AM radio frequencies: 530 KHz and 1610 KHz. These frequencies, just below and above the standard AM broadcast band (540-1600 KHz), can be received at the edges of the tuning ranges of most AM receivers. HAR is authorized for use by agencies of state and local governments.

Highway Advisory Radio systems consist of a low power AM transmitter, a cable or vertical monopole antenna, and a continuous format tape recorder/playback unit. Typically, the AM transmitter is interconnected to the tape unit via leased telephone lines. Messages may consist of travel-related information, but currently at least, commercial messages and advertising are prohibited. Because of the localized nature of the service, motorists must be notified by appropriate signing when approaching an area of HAR coverage in order that they may tune their radios to the proper frequency. Specific provisions include:

1. HAR locations "shall be restricted to the immediate vicinity of the following specified areas: air, train, and bus transportation terminals, public parks and historical sites, bridges, tunnels, and any intersection of a Federal Interstate Highway with any other Interstate, Federal, State, or local highway."

2. HAR message content is restricted to "noncommercial voice information pertaining to traffic and road conditions, traffic hazard and travel advisories, directions, availability of lodging, rest stops and service stations, and descriptions of local points of interest."

Distribution

Direct outlets for printed materials have been established in highway rest areas by the DOT, and in Visitor Information Centers by the DCED. Other distribution means are direct mail, telephone and the press (including broadcast media). Direct mail often is actually indirect — sent first to other state agencies, county and municipal agencies, licensing agents, and retail outlets for the final distribution step. Primary printed materials are produced by individual agencies in quantities on the order of 50,000 to 350,000 for each piece, in some cases several pieces per agency. DOT, Fisheries, and Game currently have the lead in quantities produced.

Table 8 summarizes the contents of current agency information material.

Summary of Current Agency Information	Table 8

Type of Material	Amount Published
Text Pages (Alphanumeric)	600
Maps	75-100
Photos	200-250
Charts	60-75

Audio

   HAR—seasonal, pass related

   Telephone—access during business hours, plus special purpose lines

Changeable Message Signs—two locations

For a more detailed description of agency information practices, please refer to the Research Report in the Appendix.

Status of Current Public Information Dissemination — A Summary

A review of the information now provided by State agencies reveals an excellent utilization of existing operating budgets using today's standard information tools. In-home/at-business data is provided with press releases, telephone, direct mail, and printed materials. A review of the material available shows that it does allow individuals to trip plan. Two problems exist, however. Most of the necessary information comes from pamphlets, brochures and maps, which may or may not reflect the latest conditions. These materials are reasonably well maintained, given the resources available, but the time from data gathering through printing and distribution, plus the time between data updates, can seriously jeopardize the accuracy and timeliness for trip planning. User telephone calls and agency press releases provide some updating, but the information is determined usually well in advance and cannot guarantee high reliability to the trip planner.

The second problem is the amount of effort required by users. They must coordinate a variety of information to derive a composite trip plan to suit their specific interests and needs. This composite plan must come from their own sorting and calculating, working with usually very general and often incomplete information. Studies have shown that the vast majority will not take those steps.

Agency information products and processes were evaluated in terms of a set of effectiveness criteria to determine current program performance and capabilities for meeting agency goals. These criteria, plus several functional attributes, comprise what are identified in this report as 11 primary considerations related to successful agency information dissemination:

1. Targeting
2. Content
3. Consolidating
4. Distributing
5. Updating
6. Formatting

7. Timing
8. Usability
9. Reliability
10. Quality
11. Data Gathering

The following is a discussion of how well the primary communication considerations are addressed with current information disseminaton procedures. Much of the discussion will center on printed materials, since agency public information programs currently rely primarily on print techniques.

Targeting

The principal objective of targeting is to ensure that specific information is received by those who need it or want it. This objective can partially be satisfied with present printed materials and advertising media efforts. Current means satisfy the need to create interest but often fail when specific information is needed. To expand the present means to include all, individual needs would have to be considered in each publication; every item of importance would have to be included. Even if such a something-for-everyone approach were possible, it would make it difficult for individuals to sort out the portion of information that they needed. There is also no opportunity for one-to-one response to individual requests. However, a document that began to consolidate various state information may prove useful as a starting point.

Similarly, emphasis cannot be tailored to changing personal needs or specific circumstances. If agency priorities shift from one item to another, printed materials can stay in step only if they are reprinted. There can be no varied highlighting of the most significant points of reference as user concerns vary.

Content

Adequate content is difficult to provide and manage under existing procedures. With printed matter, the materials currently prepared and presented to the public have been necessarily limited.

For information materials to be truly comprehensive, they generally must involve a large body of information—more than any agency would want to publish or present at one time, or more than anyone would want to read or listen to. In fact, no matter how complete a publication or announcement is, it is always somewhat incomplete. Not everything can be accounted for in a single instance, and with the inflexibility of print, anything left out is likely to remain left out for some time.

The requirement for comprehensiveness leads to a high level of detail and an awkward amount of complexity. Within a single offering it is difficult to achieve an appropriate balance between overloading and insufficiency. It is a question of accommodating both depth of inquiry and ease of access. This is particularly true with trip planning documents that are general as opposed to ones tailored to the individual's trip plan.

Consolidating

The principal objective in consolidation is to complete the information request in as few steps as possible—from the user's perspective. Existing dissemination procedures do not lend themselves well to consolidation. Efforts to cost-effectively combine information from separate agencies are hampered using print techniques. Problems of content volume and complexity would be exaggerated by melding of multiple information sets. In those instances where agency information needs could be put into a consolidated package, a labor intensive costly process would be involved, to produce an information source subject to its inherent updating and timeliness problems.

Distributing

Current distribution is not covering demand. Improvements in distribution frequency and reach would require increases in quantities of printed materials and the number of outlets. Ignoring the timeliness and updating problems of printed materials, such increases would enable better distribution timing as well as more availability and access.

Amounts of information and numbers of outlets available have been considered less than adequate in recent years, and totals have been reduced in several significant cases this year compared to last year. Still, volumes are substantial and costs are straining budgets. Increasing quantities and distribution seems out of the question. Yet to improve communication with the public, it appears necessary to make more text, maps, photos, charts, and voice announcements more readily available to more people.

Updating

Printed materials, once produced, cannot be readily changed. Follow up notices and inserts can be issued noting items to be deleted or offering additions and substitutions, but follow up procedures introduce the same difficulties that are present in the initial publication process.

Information can be no more current than it was at the time of the latest printing. A follow up is only temporary, setting the scene for more follow ups. Each statement in print leaves itself open for revision. Therefore, a major drawback of hardcopy media is the possibiliy of information being out of date, many months out of date by the time it is read by the user.

Revisions coming at different intervals would mean reprinting and re-distributing unchanged material as frequently as revised material. The greater the amount of unchanged content at each point of revision, the greater the impact to updating costs.

Although follow ups may not require complete reprinting, the production/distribution steps are always the same. Reduced content will not necessarily mean a commensurate reduction in costs. Distribution, in particular, may see no reduction when reprinted materials are sent to as many locations as in the original or other previous distribution.

Also, there are several difficulties with partial reprinting: (1) Updates may not reach their intended destinations, people who are using or will use previous, related materials. Or, updates may arrive too late for use by the intended receivers. A good example of this problem is changes in fishing river closures and openings. (2) A series of related documents can easily become separated from each other. If part of a series is misplaced by the user, the remaining documents may be of little value. If only the parent (original) document remains, it may be unknown which of its provisions are still in effect and which are not. If supplements are all that remain, only revisions can be confirmed. Unchanged provisions, the base set of information, are then unavailable unless accurately remembered. (3) After several updates have been issued, outdated pieces may still be in circulation and available at distribution outlets. In many distribution racks old materials remain mixed with the new, especially when maintenance of

racks is left up to second or third parties. The public has no way of knowing whether the latest material encountered is actually the latest produced. Any piece of information newer than what people have previously received is likely to be construed as the last word on the subject.

Reprints require the same procedures as required for previous editions: print production, printing, and distribution. As situations and regulations change, updates continue to be needed, demanding renewed cycles of effort.

Few solutions using current dissemination procedures are available. The use of telephone and broadcast communications can provide announcements of changes and perhaps brief descriptions of revised conditions. However, these are primarily supplemental measures. New guidebooks, regulations handbooks, etc. must be published to pin down revised provisions. Every page of revisions costs at least as much in time, materials, and distribution as every comparable page before it.

Formatting

The principal objective in formatting is to create the information needed by a user in an easy to read, consolidated format. This means that in many cases the user does not want to be concerned with who has the information, but rather answers to the questions. For example, if the user wishes to know about a particular park, its fishing conditions, available campsites, weather and the best way to get there, formatting ought to present it in a consolidated form. Printed material has a fixed format per user presentation. Fixed printed formatting presents the opportunity to provide interest in an activity or place and even present great detail such as fishing regulations. The problem occurs in the amount of material which can be needed in order to answer specific requests.

Further Considerations

Comments regarding the information dissemination considerations of (7) Timing, (8) Usability, (9) Reliability, (10) Quality and (11) Data Gathering appear in Table 12 of Chapter IV. The preceding statements, however, constitute the main body of conclusions related in this chapter, and embody most of the impacts of these last five categories.

Expansion of Current Dissemination Procedures

Printed material is excellent for some applications. As a permanent reference for basic information that does not need to be updated often, there is no real substitute. An expansion of printed materials dissemination would enhance advertising and distribution since current public demand exceeds supply. This would increase the promotion and identification of state resources. At the same time, any large scale expansion of print output to increase either the people served or the frequency of service will be time consuming and costly.

The Research Report quantified $89,500 annual costs associated with printing and mailing. This included only a portion of agency print material direct costs and no costs for design production or other labor. Consequently, it is clear that more than $100,000 is being spent per year in direct costs alone. This is in the face of serious budget cuts that have significantly reduced this expenditure. The report also shows that demand is exceeding supply. The tendency is that an anticipated two year supply gets used in less than a year. Therefore, it appears reasonable to assume that an additional $100,000 of materials per year would be used. Based upon Department of Fisheries data in the Research Report, a one agency brochure would cost 12 cents for printing and mailing. Therefore, $100,000 would add some 850,000 pieces of literature, ignoring other associated labor costs. The main negative benefit of this expense is that several of the brochures attempt to disseminate information that is out of date by the time it is received. (An example is the Fisheries brochure that contains sport fishing regulations.) Consequently, some care should be exercised in what kind of printed material is expanded. It is also questionable as to what degree additional printed material will enhance the public's use of state resources.

Increased use of fixed or quasi fixed signage would provide opportunities similar to those for printed materials. In addition, regulation warnings, fee requirements, facility availability, support facility identification and emergency and recreational conditions, could be better disseminated with increased signage. Several problems exist, however. First, the updating problem is only solved with a labor intensive expense, that is, the cost of the personnel to keep the sign information up to date. In addition, the problem of vandalism exists at locations where a significant amount of traffic is not present. Third, fixed signage often cannot be changed to reflect changing conditions; instead it must be replaced.

Expanded use of public telephone call in is also a viable consideration. For example, a reinstitution of the very popular "salmon hotline" would be a natural addition. However, because of its labor intensive nature, plus the cost to make it toll free, the Department of Fisheries found it to be too costly. Their problem highlights a significant cost of telephone call in. This procedure requires the use of operators to answer the calls, which is a very expensive service. Based on industry standard of a $15.00 operator loaded hourly rate, each operator position would cost $31,200 per year. To cover information dissemination requirements in this manner quickly escalates costs. Even with consolidation, the problem is not solved, since the consolidated request, covering more information, would take longer and tend to require additional operators.

An increased use of broadcasting would be beneficial, but it does not appear a viable answer for most information objectives for three primary reasons. First, there is no control over when (what time of day, what day of the week) the free of charge public service messages are broadcast; therefore these spots cannot be relied upon to deliver the information in a timely manner. Second, the spots that are paid for are expensive because they must be bought in saturation (sufficient quantities and times of day) in order to reach significant numbers of people. Third, it is virtually impossible to broadcast a consolidated set of information about an activity in one spot. Radio and TV, therefore, are basically limited to promotional advertising or emergency conditions broadcasting.

DCED is undertaking an extensive national promotional advertising campaign. The return on such a campaign is very dependent upon what kind of follow up information dissemination occurs. Using existing procedures, the follow up would be either very costly telephone procedures, or dependence upon increased printed materials. As discussed, from the standpoint of actually increasing the use of state resources, printed materials have some serious limitations.

In summary, some expansion of printed material may have relative benefits for some of the historical information dissemination objectives. In addition, if DCED continues to institute a radio and TV promotional campaign, to maximize the benefits of such a campaign, there must be follow up information dissemination to provide travelers and tourists the necessary details to encourage the action promoted by the campaign. Ex-

clusive of support of the DCED campaign, it appears that some $100,000 to $200,000 per year would have to be added to affect even minimal improvements. Looking into the future, the problem with traditional media is even greater because of the labor intensive nature of the expenses. This means that each year the cost of providing the same total level of service increases significantly, and as population increases, it means even higher increases to maintain the per capita level of service.

Changing the Information Dissemination Emphasis

Virtually all of the agency responsibilities are related in some way to travel. The information is either to inform about travel related conditions or about travel itself. In addition, the highly important agency objectives are to (1) increase, as well as cause more efficient use of state resources, and (2) cause more efficient use of energy resources.

As noted earlier, there are three opportunities to disseminate this information: (1) before the traveler departs (origin), (2) as the traveler travels (enroute), and (3) when the traveler arrives (destination). The only significant way to accomplish the agency objectives is to influence a traveler's original travel decisions. This means getting the messages to travelers before they begin traveling, that is, "point of origin" information. Even more specifically, the information must precede travel decisions. In addition, the information must be packaged and targeted to the specific travel options being considered (and those that should be considered) by the traveler. If the information sources are multiple, and users must collate the information around their own selection of possibilities, no significant stimulation of trip planning occurs. Table 9 depicts the diminishing potential to inform that occurs throughout the travel sequence.

Information Zones   Table 9

1. Origin (Pre-Trip Planning)

   Potential of learning everything currently in effect and some predictions of changing conditions that relate to an intended trip.

   Common Devices: Telephone, Media, Mail, Maps, and Other Printed Matter

2. Enroute (In-Trip Planning)

   Need to learn anything not previously covered, plus information regarding changed conditions and/or changed intentions.

   Common Devices: Phone, Signing, Radio, Printed Matter, Information Centers

3. Destination (Also Origin For Return Trip)

   Need to confirm status of conditions/situations previously learned about and/or need to learn further specifics regarding facilities/activities, plus pre-trip planning for return.

   Common Devices: Staff, Printed Matter, Signing, Telephone

Except for changes in conditions that actually occur while the traveler is enroute, information designed to influence the travel decision needs to be received at the point of origin. Timely, accurate point of origin information can greatly assist agencies in meeting their objectives of improved utilization of state resources and more efficient use of energy. To find out that a recreational site is closed after arriving there (destination) is clearly not efficient use of state resources or energy.

A trip planning oriented information system needs to incorporate information regarding all three zones if energy efficiency and improved utilization of state resources is desired. However, reliance on current dissemination methods would be difficult. Printed material, such as a trip planning highway book, would have to be introduced. In order to cover all of the situations associated with each particular trip possibility, it would be a voluminous document, one that would be out of date by the time it was printed.

Travel Efficiency Planning

In order for any travel related information dissemination system to cause energy efficiencies, said information system must either (1) eliminate trips that would have otherwise taken place, (2) shorten the trips taken, or (3) increase the miles per gallon of gasoline, or increase other aspects of vehicular machine efficiency. This planning and advisory information, properly presented, could have a significant impact on unwanted, unneeded and energy wasteful trips. Closures of roads, mountain passes, national parks, ski areas, gas stations, stores, etc., or filled recreational areas, hotels, sporting and other events, etc., can all interfere with trips that should be avoided, or shortened.

Trip planning can generate significant reductions in both commercial and recreational travel, especially if coupled with "closure" and "facility full" types of information. An information dissemination system intended to reduce energy consumption must not only provide the necessary information for trip planning, but provide it in a format that will encourage its use. In addition, the necessary information must be timely, up to date, and require a minimum of effort by the user.

Initial selection of routes, lodging, rest stops, stop overs, etc., should be made before departure. In most cases, preference for known routes over unfamiliar ones far outweighs mileage saving considerations. Consequently, to effect mileage saving initial trip planning, the public must be provided three things. First, in-home/at-business data must be available that directly identifies the alternative routes for their trips and

the miles for each. Second, to alleviate the insecurities about unknown routes, or for routes known to have potential hazards such as road closures, the in-home/at-business data must identify reasonable enroute options for potentially hazardous routes, and identify such things as gas station, lodging and rest stop information for all of the routes. Third, in order to gain and maintain use of this information, the public must be given assurance that the information is accurate and up to date.

Three zones of trip planning opportunities are indicated in Table 10.

Trip Planning Opportunities   Table 10

1. Origin

   First level (best building-in) opportunity for creating traveling efficiencies.

   Thorough planning can prevent or reduce problems such as:

   a. Following incorrect, unwanted, or unsafe route of travel,
   b. Being unprepared for circumstances encountered,
   c. Not taking advantage of enroute/destination opportunities and conveniences,
   d. Failing to observe restrictions, requirements, regulations.

2. Enroute

   Second level opportunity for creating traveling efficiencies.

   First order or follow through planning at this level can fill in missing information and/or provide updates to changeable information. Travel disruptions may be alleviated.

3. Destination

   Last opportunity to gain travel information for other than return trip or destination alternatives.

   At this level, inconvenient, troublesome, or even hazardous circumstances may be encountered. Difficulties may include:

   a. Lack of accommodations
   b. Crowded conditions
   c. Insufficient resources (goods, services, facilities)
   d. Unexpected restrictions, regulations
   e. Opportunities unprepared for
   f. Lack of local or site information/guidance

   Circumstances may lead to seeking another destination which may offer further disappointment, especially if sufficient planning is not begun (or cannot begin) before travel is resumed.

Without true trip planning, the agency objective of causing energy and state resource utilization efficiency cannot really take place. Promotional campaigns, without trip planning, can stimulate desire, but the trip planning component appears to be essential to maximizing the process. The only traditional form that can facilitate trip planning is printed material. However, the documents would have to present a combination of information from several different agencies. With each agency printing its own trip planning information, a redundant and ineffective system would result. Without consolidation of agency information, there is little opportunity to effectively implement point of origin trip planning.

In addition to point of origin trip planning, enroute updating needs to be considered. A review of existing information dissemination indicates the information can be much more timely and accurate than point of origin data, primarily because the emergency or immediacy nature of much of the information has always demanded that it be on the spot coverage. However, two problems exist. First, much of the information is not acquired in enough advance of incidents to eliminate back tracking. For example, a sign at a campsite gate saying "closed" has no trip planning or route updating value. The second problem is that little identification of alternatives is associated with inroute information. The orientation of the information dissemination is one of "what not to do" and very little of "what to do in lieu". Here also, the conclusion is that existing operating budgets are directed toward removing hazards or inconveniences but do not contain the dimension that induces energy reductions.

It should be realized, however, that enroute information is not a good substitute for point of origin information. The information system must minimize the need for enroute travel plan changes. The more available, accurate, and up to date the initial information, the less likely the plans will have to be modified after departure. Of course, there will always be unsuspected weather, road closures, road blocking, accidents, etc., that cannot be anticipated. To reduce energy consumption, the information system must do more than notify the public of such conditions. The system must do so in time for route changes without back tracking and must also identify for each traveler's destination, the most efficient optional route. Some of these options can and should be identifed as contingencies to the initial trip plan before they occur. Other on-the-spot advice should also be available. The key, again, is timely and accurate information.

Consider the weekend, weeknight shopper and local recreation seeker. Energy waste comes in the form of "facility full" and "facility closed" and "road jammed" trips. Again, point of origin data that is accurate and up to date and easy to use, with timely in-route updates, is the key to reducing such trips.

Consolidation of Agency Efforts

By combining agency information disseminations, trip planning documents could be attempted. There are significant problems, however, in consolidating printed material. When reviewing the following example, consider the problem of keeping such documents timely, accurate and up to date. The time required to print, change and reformat does not give printed material anywhere near the necessary flexibility.

A hypothetical example follows, in order to illustrate what kind of information consolidation, coordination and collation is required in order to effectively create trip planning.

Visualize the **Washington State Department of Transportation** introducing a Trip Planning Highway Book that would contain several levels of information. It would include a section for personal vehicular travel that would provide specific routing and mileage options for numerous locations across the state.

Statements to road type are not enough. In addition, costs based on miles and travel times should be included as well as road conditions which should be explained in terms that directly assist the trip planner. Such information needs to be interpreted as to impact on trip planning.

The book should also include an identification of in-route support services such as food, gas and lodging. Also, it would include the cost and schedules of public ground transportation options and possibly airline travel options, for comparisons to cost and time of the personal vehicle trip plan. Next, there should be an appendix section for all trip routes that require use of the ferry system that provides estimated departure requirements that would fit ferry departures.

Second, WSDOT would then have a most difficult task of finding some way to keep the trip planning book current through the use of bulletins, supplementary inserts, daily radio broadcasts, i.e., "This is your Highway Department with today's updates to the WSDOT Trip Planning Manual . . ." Third, WSDOT would have to ensure that access to the trip planning books would be easy, a "one in every home—if you ever travel" kind of concept. Fourth, people would have to be encouraged to use the publication via promotional broadcasts. Fifth, the book's structure would have to be very simple to use. Without these steps to encourage use, and to ensure that the information is current, it would receive limited use.

Department of Fisheries would then augment the WSDOT Trip Planning Book (not with its own publication) with licensing requirements, fishing opportunities, and any associated travel or fishing restriction information. It would have to be somehow correlated with the trip route options in the WSDOT book.

Department of Game & Washington State Parks and Recreation Commission would provide the same kind of augmentation to the WSDOT Trip Planning Book as was discussed for Fisheries.

The expense of the preceeding printed material scenario, not to mention the inherent problems in making it effective, suggests that it is not a viable option. This example, however, does provide a good perspective of what information is needed.

Electronic and Graphic Information Systems

New electronic technology available today affords a high degree of communications flexibility and range. The basic forms of this technology are familiar in the home, in business, industrial, scientific, educational, and commercial broadcasting applications. These applications rely increasingly on computerized automation and data management.

The communications devices used include data and word processing systems, video recording and reproduction systems, closed-circuit television, high speed electrostatic printers, various solid state displays and voice synthesis. Distribution techniques include radio frequency transmission, cable systems, microwave links and telephone lines.

Although proven in other fields, these types of devices and distribution techniques have so far found only limited direct application in public information programs. In this regard, electronic communications components and systems appear as new technological options to be considered as potential extensions of existing agency dissemination systems.

The range of available technological options includes:

1. Display/Output Components & Systems
    a. Video displays (cathode ray tubes — CRT's)
    b. Electronic alphanumeric displays (solid state LED's, LCD's, etc.)
    c. Television systems
        (1) Cable TV
        (2) Low power TV
        (3) Videotext
    d. Computer terminals
    f. Voice synthesis telephone systems
    g. Citizens Radio Service
    h. Electrostatic printers (including laser technology)

2. Communication Links
    a. Telephone lines
    b. Microwave links
    c. Dedicated cable hookups
    d. Radio frequency transmission (RF)
    e. Satellite communication
    f. TV broadcast "piggyback" transmission ("flyback transmission")

Display/Output Components & Systems

Video displays (CRT's) are comparable to home television receivers, except that they typically offer higher resolution (better picture quality) longer life, and greater reliability. (Video monitors, special purpose units, are designed to accept direct video signals, bypassing the broadcast tuner circuits that are standard in TV sets.) The range of images that can be reproduced on CRT's is the widest of any display currently available: alphanumeric, graphic, and photographic. Images can be shown in black and white, multiple colors, or full color. Image sources can be videotape, videodisk, computer disk or other storage devices, computer text or graphics generator, or live video camera.

Video Display Examples   Figure 2
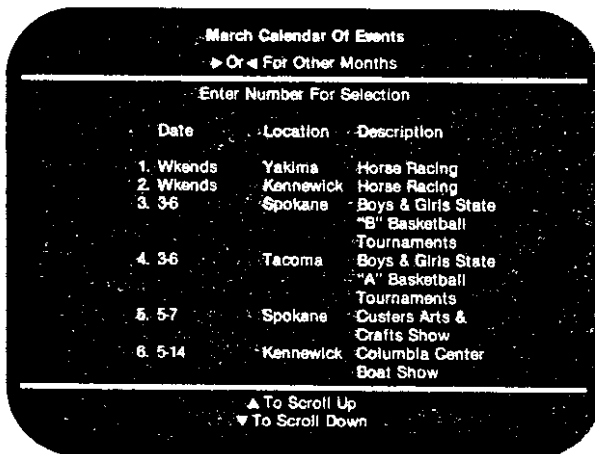
Alphanumeric

Video Display Examples Figure 2 cont.
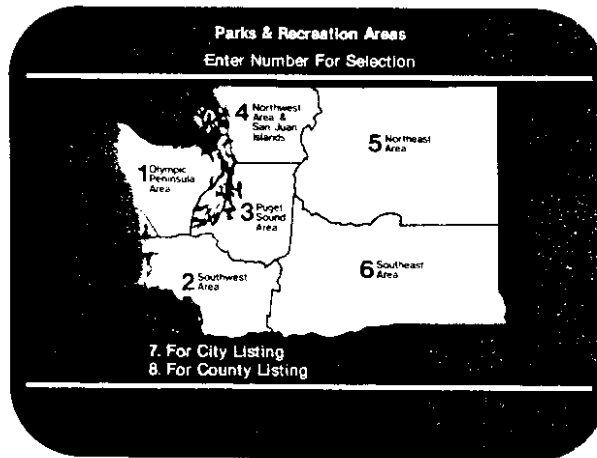
Graphic
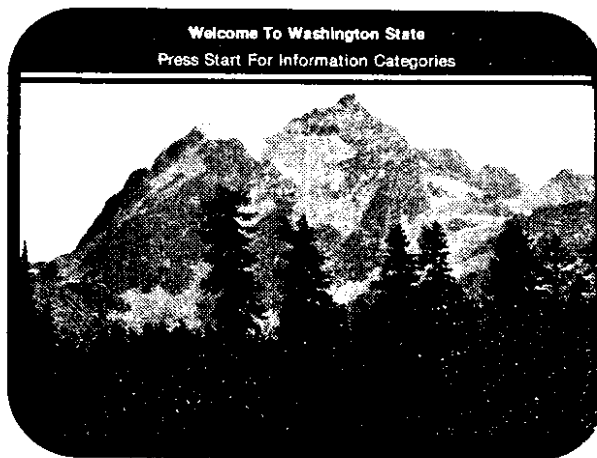
Photographic

Electronic alphanumeric displays are comprised of segmented characters or arrays of dots, using either light emitting diodes (LED's), liquid crystal displays (LCD's), or gas discharge or incandescent elements. These displays, all essentially solid state, are noted for their fast response, long life and high reliability. The segmented types can produce alphanumerics only; the dot array (dot matrix) types can produce simple graphics in addition to alphanumerics. LED's are available in several colors. LCD's and

other types can be colored by using filters in front of them. A major difference between LCD's and the other displays is that LCD's require an external light source. Images are computer generated, with characters, text, and graphics stored in computer memory or peripheral storage devices.

Electronic Alphanumeric Display Elements Figure 3

Segmented character element for electronically displaying letters and numerals. Can be LED, LCD, or electromechanical device.

Display segments selectively energized to create alpha characters.

A continuous matrix of dots for electronically displaying letters, numerals and simple graphics. Can be an LED, LCD, or electromechanical device.

Display elements selectively energized to create numerals and letters. In these examples, the numerals are single stroke 5X7 dot characters; the letters are double stroke 6X7 characters.

Television systems are a means to reach the public through available video communications channels. The output is a video image displayed on a standard television set. Depending on the system used, images can be alphanumeric, graphic, or photographic—in black and white or color. Distribution is by cable and/or radio frequency transmission. The alternatives include:

Cable TV is in widespread use throughout the State of Washington. Installations offer a choice of channels in addition to what is available from television stations in a given area. Cable systems can carry photographic and computer graphic images in color. And two-way communication can be carried over phone lines, providing an interactive capability.

Low power TV (LPTV) is a new television service proposed by the Federal Communications Commission in September, 1981. Stations under this sanction will operate on the same channels as standard broadcast stations but with greatly reduced power and therefore a severely limited range. Low power stations will operate at 10 watts for UHF, compared to the hundreds of thousands of watts authorized for conventional stations. Effective range will be approximately 25 miles, compared to the hundreds of miles that conventional transmitters can reach.

The purpose of the low power ruling is to make television broadcasting more readily available to local groups and individuals, especially for presentation of public service programming. LPTV is intended to be community television. Low power stations can be originating or non-originating (in terms of programs); they can be commercial or non-commercial. Full color pictures in motion and with sound are carried by LPTV systems just as they are by conventional broadcasting, and LPTV technical quality must meet established broadcast standards.

Videotext television information systems are in operation throughout much of Europe and Canada and are now being tested in several parts of the U.S. These systems display still color images generated usually by computer graphics systems. There are two kinds of systems:

1. Teletext—a one-way broadcast oriented system which sends pages of information that the TV viewer chooses as it goes by.

2. Viewdata—a two-way TV/telephone system which allows the viewer to request specific information and to instruct the computer system to carry out a transaction such as making a reservation, ordering merchandise, or transferring money.

Teletext is a broadcast oriented system. The information is sent by a television station during the flyback time (blanking) in the video scan of regular TV programming. The user's TV/terminal has a sophisticated processing capability allowing it to decode the transmitted frames and grab the ones designated by the user. The frames are con-

stantly updated from the broadcast stations. The teletext user does not interact with the central computer, only with his or her local terminal. This system is limited in the number of pages it can transmit in a practical time period. Typically about 800 pages of information are available.

Viewdata uses the home telephone to connect the TV/terminal to a computer center. The viewer selects the desired information either from menus or by requesting the desired information with a keypad. The request goes over the phone line to the computer, then the central computer sends back a page (or screen) of information. Viewdata systems could have as many as 200,000 pages of information on line.

Example of Videotext Page of Information   Figure 4
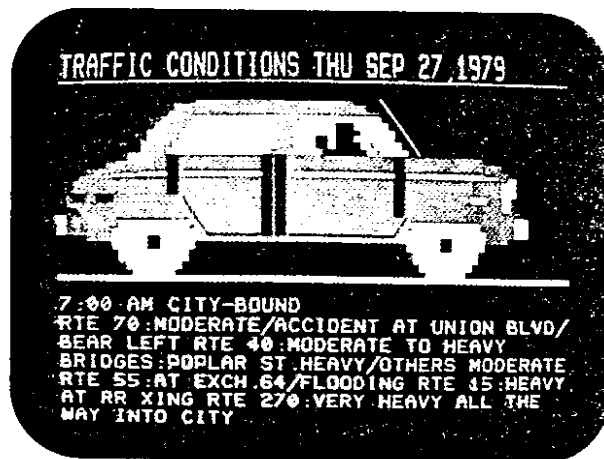
Computer terminals allow interaction between users and information sources. Displays are CRT's, black and white or color. Images are computer graphics, and limited animation is possible but not full motion. Selections, responses, and other user commands are entered on the terminal keyboard, typically patterned after a typewriter keyboard.

Voice synthesis telephone systems provide information to callers using speech generated by computer operated solid state devices. Voice sounds and intonation can be sufficiently natural that they are difficult to distinguish from tape recorded messages. A major advantage over tape recordings is that a wide variety of built in

responses can be accessed instantly, allowing interaction with callers. Touch keys or dials are used to code in user qustions and responses. Another advantage is that system responses can be selected and automated by computer keyboard entry; no recording, editing, or tape duplicating is necessary. Also, there are few mechanical devices to wear out.

Citizens Radio Service uses Citizens Band Radio (CB) as a wide area communication system to aid motorists. The primary value of this option is enroute emergency information dissemination, helping agencies to meet their objectives associated with emergencies. CB might be a worthwhile answer to this need, but its characteristics and application would be of minimal assistance to the main objectives being evaluated in this report, namely travel related energy efficiency, and more efficient use of state resources.

Electrostatic printers can make detailed black and white or color hardcopies in a matter of seconds. These devices, similar to plain paper dry copiers, are faster than impact printers, and can reproduce more complex graphics than the much slower pen plotters. CRT graphics, as well as alphanumerics, can be reproduced on electrostatic prints.

Communication Links

Telephone lines in various grades can carry voice, data, and limited video signals. Lines can be dedicated (leased) or non-dedicated ("dial up" or "ring down"). Dedicated lines allow a constant stream of information to be transmitted. Dial-up lines are used for intermittent system communication just as they are for regular telephone calls, and charges are less than for dedicated lines. Computer graphics and video images can be sent over the same voice grade lines that carry ordinary calls. No special line equalization or signal enhancement is needed. The only drawback is that the pictures must be stills. Images can be in color, but motion currently is not possible. The major advantages of telephone lines are their affordability and availability. Phone lines provide a network already in place that reaches virtually every part of the state.

Microwave links employ transmitters and receivers that send radio signals from point to point without the use of lines or cables. Large dish-shaped antennas are used to transmit and receive frequencies that approach the visible light spectrum. The nature of these *microwave* frequencies accounts for the fact that, as with light waves, signals travel only in straight lines; they will not follow the curvature of the earth. This line-of-sight transmission charactertistic requires that antennas be placed in direct line with each other. The nearly-light qualities of microwaves mean that they cannot travel through the opaque materials that lower frequency radio waves can penetrate.

Microwave transmission can carry all signals that telephone lines will accommodate (voice, data, video stills), plus full, real time video signals that are needed for motion. Unlike telephone systems, microwave facilities are established only as they are needed. And when established, they typically are dedicated to the use that prompted their existence. Therefore, service cannot be leased from existing microwave networks. New networking will require new microwave links.

Dedicated cable hookups can carry anything from limited data transmission to high quality video signals, depending on the type of lines or cable used. A cable network, or partial network, would require overhead or underground installation from every source or distribution point selected to every intended destination point. As in the case of microwave, there are no existing installations available for lease. New network hookups will require new network facilities.

There are existing cable installations offered to numerous homes and businesses throughout Washington State. These have been set up, and are continuing to be set up by private firms primarily to provide subscribers with television reception or additional channel choices that otherwise (through wireless RF transmission) would be unavailable. There is at least some planned accommodation of public information dissemination over these cable systems. The connections to private outlets and the provision for public information suggest that these cable operations can be appropriate extensions of a primary statewide public information network.

Radio frequency transmission can be carried through cables but is most often thought of as wireless communication. In either case, separate channels are allocated, defined by the frequency or frequencies used. In the wireless mode, a finite number of frequencies have been identified in the RF portion of the electromagnetic spectrum. National and international law calls for government assignment and regulation of the limited frequency availabilities to protect the public interest in this highly valuable resource. Most of the possible frequency assignments have been made, leaving limited opportunities for acquiring additional rights to use of the "airwaves". Current allocations include standard broadcast, marine, police, transportation, amateur, citizen band, and emergency communication bands.

RF cable transmission possibilities are limited only by the number of cables installed and the capacity of each cable. It is possible for a single cable to accommodate the full range of RF frequencies, making cable transmission vastly more expandable than wireless. The drawback to cable technology is the cost, and often the difficulty, of installation.

Cable systems require transmitters and receivers plus hardwire connections (includes fiber optics). Wireless systems require only transmitters and receivers. Though wireless transmitters tend to be more costly than cable transmitters, total cable system costs can more than offset the difference. Fiber optics are also now a viable option to standard RF cable transmissions, and for many applications could be superior.

RF wireless applications include full power and low power broadcasting. As with cable hookups, low power radio and television can be appropriate extensions of a primary statewide public information network.

Satellite communication is most appropriate for interstate as well as intercontinental transmission. Earth stations beam signals to and receive signals from orbiting communications receiver-transmitters that in effect act as reflectors, bouncing the signals received to locations as far as halfway around the world from the originating stations. Microwave signals are used due to their line of sight characteristic which eliminates the chance of causing interference in directions other than those specified. Because of the relatively high cost of satellite communication and its special appropriateness for long distance transmission, it currently at least is not a practical consideration for intrastate use.

TV piggyback transmission is a means to incorporate additional picture information into the normal picture-sound signal televised by standard broadcast stations. A portion of this additional information is inserted during a brief lapse in scanning between each frame of the regular picture. This is the *flyback* time, the instant when the electron beam bombarding the inside of the picture tube moves abruptly from the end of a scan at the bottom of the screen to the beginning of the next scan at the top of the screen. The picture signal is blanked during flyback so that the upward trace is not seen. The flyback/blanking portion of the TV signal is really no signal at all. It usually carries no picture information, but it can. There is room to insert a very limited amount of picture (no sound) compared to what is used for the regularly televised images. So little can be accommodated that a single still frame must be built up from a series of flyback transmissions. The stills that are formed are invisible except to special decoders attached to TV sets. Piggybacking of still video information does not affect normal TV transmission or reception.

Flyback transmission is the technology behind videotext systems. Its application in the U.S. is currently so limited that its use as part of a public information system cannot yet be considered practical. A significant limitation is the restriction to still images. Presentations are limited to lists and static diagrams without the ability to overlay, animate, or otherwise dynamically highlight user-specific content.

Impact of New Electronic Information Systems

A review of the dissemination methods embodied in the new electronic information system technology, and of its costs, suggests that this may represent the most feasible way to move closer to agency information dissemination objectives. The use of electronics minimizes several of the problems inherent in conventional methods. The information is much easier to update and keep accurate, easier to consolidate different sets of information and its capital intensive nature suggest the potential for long run cost savings.

Reproduction devices, displays, and communications links that are fully or primarily electronic contribute to three basic advantages over standard print, commercial broadcast, and public contact applications:

1. Flexible formats
2. Non-repetitive production/distribution processes
3. Dedicated channels

Flexible Formats

Electronic systems provide a ready means to enter, revise and update the information they handle. Both the data base and the manner in which the data are presented can be easily manipulated by using electronic controls. Presentation can be altered in terms of the type of output selected and in terms of the content and format used with a given output. System controls include computer keyboards, light pens, and graphics tablets. Keyboards, patterned after electric typewriters, provide a means to enter alphanumerics and some simple graphics into a system, and to control system functions. Light pens and graphics tablets enable images to be drawn on display screens or other digitizing surfaces for storage and subsequent display.

Non-Repetitive Processes

Electronic dissemination allows information changes to be made up to the time of presentation, even during presentation if necessary. Changes can be made over and over with limited effect on dissemination costs. When partial information changes are

needed, only the changes are dealt with while the remaining content is left alone. Since the electronic system can produce hardcopy when required, system hardcopy is produced from the same data base that supports CRT's and other displays, hardcopy output is automatically updated in step with display output.

Dedicated Channels

Electronic distribution costs are primarily a matter of initial facilities capitalization. Once in place, a system delivers information continuously with only minimum additional expenditures required, in some cases for leased lines and also for routine system maintenance. The number of times information is transmitted has no cost impact.

An electronic distribution system dedicated to agency use would be a dependable, controllable, always available means of public information dissemination. Channels could be directed to key outlet locations with the assurance that all necessary information and updates could be delivered without conflicting with operational budget constraints.

Further Considerations

When current methods of information dissemination were reviewed, several of the 11 basic dissemination considerations were discussed, such as Targeting, Content, ease of Consolidation, ease of Distributing, and ease of Updating. The following is a review of those same considerations for an electronic information system.

Targeting

Electronics afford a wide margin of selectivity. Individual needs and specific circumstances can be targeted by easily modified preprogramming. Dissemination can be matched to a current situation, then as new situations arise, adjustments can be readily made to maintain targeting effectiveness. Both content and emphasis can be manipulated to advantage.

Where means are provided for public interaction with the system, selectivity can be user controlled. Information output can be tailored to individual needs upon request. Sorting and identification of information details are reduced to a few simple selections

made from a brief set of choices listed on the displays. The system does the bulk of the work. The public is never confronted with the full maze of information possibilities. This query-related process puts public contact with the information program on more of a personalized basis, thereby upgrading both efficiency and effectiveness.

Content

Electronic systems can accommodate a comprehensive amount of information without creating a dissemination overload. With electronics, information storage, processing, and distribution can be handled selectively. Content is consistently dealt with in a piecemeal fashion, rarely as a whole. There never needs to be a concern about publishing everything at once, only what is needed at a given time. Additions, deletions, and revisions are made as they are needed.

From the public point of view, there is the advantage of having a full set of information available at once, that is always available for review, in whatever depth is necessary. A widely variable range of output is possible because of the flexibility of electronic information processing. This flexibility virtually eliminates concerns regarding overwhelming the public with complexity or failing to provide them with sufficient detail.

Consolidating

Combining information from separate agencies into a single package is a practical approach given an electronic system to aid assembly, organization, and dissemination. The flexibility that makes a single comprehensive set of information reasonable also makes the consolidation and coordination of multiple sets reasonable.

From the agency standpoint, total volume is stratified. Each agency's information set is just as accessbile as every other set. Yet various combinations can be put together instantly for internal review and processing or for output to the public.

From the user's standpoint, information combinations are presented that answer a full set of questions related to a particular need, regardless of which agencies are called upon to supply the information. In the case of video displays, specific information can be superimposed over a base set of information.

As an example, a video response to a request for salmon fishing information might be composed of three levels of overlaid information:

1. A portion of a state highway map
2. The designated fishery boundaries
3. Regulations in effect and other relevant instructional/directional information

The highway map, the base element of information, would show the latest road conditions along major state arteries, including any closures and recommended detours in effect. This information level and the primary directional information in level three would be provided by and updated by WSDOT. Fisheries information in levels two and three and secondary directional information in level three would be the responsibility of the Department of Fisheries.

Actual levels would not be apparent; the viewer would see a composite image including graphics and inserted alphanumerics. Questions asked about other activities would result in other selectively overlaid presentations, in most cases a base map again with varying added information depending on the subject. A succession of images would offer additional details regarding regulations and directions if necessary, and locations and descriptions of goods and services.

Distributing

There is no system cost related to repetitious use of electronic systems, since the cost is in data gathering, storing, and creating the electronic system itself. Transmission costs are only the power to send the signal. Distribution *frequency* can be taken to the maximum without need for increased labor or materials. Increases in distribution *reach* require additional outlets which may mean increased capital costs, but once established, these outlets can be used repeatedly without further affecting or only nominally affecting costs.

Updating

The cost of keeping electronically disseminated information current can be cost effective. Alphanumeric updates are easy to make, requiring minimal labor. New entries are typed on a keyboard and then a few additional keys are used to add instructions regarding disposition of the entries. Graphic updates require more effort, but still the involvement can become routine with proper training.

An important advantage offered by electronics is the ability to update selectively. Regardless of when revisions are needed, they can be handled easily—item by item, agency by agency. There is lttle advantage in waiting for changes to accumulate; there is no need to reprocess unrevised information.

Formatting

An important ingredient in the electronic system is the use of graphics to assist travelers in visualizing location and positioning of geographical relationships and travel distances. Graphic content also aids mental imagery which contributes to effectively promoting state resources to the visitor.

Graphic presentation is an outstanding directional aid for all three categories of traveler information, that is Routing, Goods and Services, and Destination.

Impact of Consolidation

As already mentioned, the Research Report shows that all agencies are involved in travel or travel related information dissemination. The value of each agency's information is, therefore, enhanced when it is provided in conjunction with the information from other agencies.

An approach that seems to offer a series of benefits is consolidation of their public communication processes. If duplicated production efforts and parallel distribution activities could be reduced or eliminated, more comprehensive programs could be carried out without necessarily increasing costs. Also, if multiagency information were provided through a single source with common outlets, a more complete picture could be made immediately available to the public, increasing effectiveness and actually lessening overall demands on information programs (less fragmentation, less confusion—leading to less frequency of need). Correlated to this approach is the use of technological advancements to aid consolidation. An automated system for instance, with built-in electronic communication channels would facilitate management of a combined program, provide more assured public access and quicker response to needs, and would curtail additional labor costs. Before ideas regarding electronically operated systems are pursued, however, there are consolidation issues to examine.

For consolidation to be reasonable, there must be a functional relationship among the individual agencies' public information goals. The connection can be (1) consistency of purpose, (2) message reinforcement or cumulative effect, (3) time and place coincidence, (4) shared audience, (5) interdependency or interaction of information content, or any combination of these relationships.

Although the agencies considered here are diversified, they do share some significant common ground. First of all, most if not all of the public information they disseminate is aimed at a composite public category: TRAVELERS. This category, often considered the realm of WSDOT, DCED, and the State Patrol, generally is not thought to be aligned with other agencies. What must be remembered is that almost all users of state facilities and resources are also travelers. Travel, therefore, is regularly affected by the policies, procedures, and information processes of an assortment of the state's governing bodies. In this regard, then, travelers are viewed not only in a generic sense, as people on the move, but also in a number of specific senses related to activities throughout travel and at the culmination of travel.

A more complete definition of traveling is especially useful when considering trips that involve stopovers and/or activities away from home, office, or other known local destinations. In these cases, travel needs and, therefore, travel information requirements, go beyond basic directional, regulatory, and goods and services categories. Because most state managed destinations are remote from major population centers, most travel to those locations is extensive enough that further information assistance is necessary for assurance of safe, successful trips. When this relatively distant, activity-related travel coincides with an agency jurisdiction such as fisheries, game, or state parks, the value of information consolidation becomes apparent.

Several interagency relationships are implicit within the framework of the TRAVELERS category:

1. Consistency of Purpose

   All agencies are united in a commitment to increase travel efficiency and improve the use of Washington State resources.

2. Message Reinforcement

   Information provided by WSDOT directly correlates to the lesser degree of information provided by other agencies. There is a beneficial cumulative effect among the energy, resource, and regulatory messages distributed by the agencies.

3. Time and Place Coincidence

   Need for information from one agency regularly corresponds to a need for information from one or more of the other agencies. The time and place of these needs is often coincidental, suggesting a benefit from common access.

4. Shared Audience

   Target audiences are variously shared by pairs and groups of agencies due to public information needs that overlap agency jurisdictions. A point of reference common to all agencies is "the traveling public."

5. Information Interaction

Conditions, regulations, and other provisions reported by an individual agency often affect situations reported by the other agencies. An example of information interdependency: availability of routes, facilities, and goods and services.

The following, Table 11, summarizes the objectives of consolidating agency information dissemination activities.

Consolidated Objectives   Table 11

Reduce/Inhibit	**Increase/Promote**
Use Of Fuel	Economic Develpoment
Length Of Travel	Tourism
Complaints	Safety
Disappointments	Convenience
Unlawful Practices	Approved Procedures
	Effective, Use Of Facilities/Attractions

IV. Costs/Benefits of Electronic Systems

Previous sections of this report have identified state agency responsibilities and objectives, have made findings as to the information dissemination options available, have concluded the advantages and disadvantages of each, and have used these findings in order to come to a recommended course of action. This section contains a relative benefit analysis of those findings and conclusions which places some degree of quantification on the advantages and disadvantages of the different dissemination options.

This section's analysis is an evaluation of the relative benefits between courses of action. This analysis is not, therefore, an engineering economic selection study between two or more alternative solutions. The kind of information for a quantitative cost versus benefits analysis generally found in an engineering economic selection was not available for this type of project.

Dissemination Alternatives

Agencies currently use the following six information dissemination procedures in order to meet information dissemination requirements:

1. Mailed Printed Materials (Direct Mail)
2. Picked Up Printed Materials (Pamphlets/Brochures)
3. Fixed and Quasi Fixed, Hand Changed Signing (Variable Message Signs such as the Ferry Signs)
4. General Audience Video Broadcasts (Advertising Compaigns)
5. General Audience Audio Broadcasts (Press Releases)
6. Specific Audience Audio Broadcasts (Sno-Line, HAR, etc.)

In addition to traditional procedures are new procedures identified by the research conducted for this project. This research indicates that agencies could now also use computer processed and accessed information systems. This new technology generically provides:

7. Interactive dissemination processes
8. Variable information through computer video graphics and video pictures
9. Computer access to, and generation of traditional information procedures

The options for expansion of information are:

1. Expansion of traditional methods.
2. Application of the new electronic dissemination procedures along with the emphasis change and consolidation approach.

Each alternative is evaluated in light of the procedures that each step would use and how well the result would enhance meeting the information dissemination considerations identified in Chapter III. The evaluation looks at both current and long run impacts. In most cases, the conlusions are generalities where specific dollar costs are not possible. Consequently, this relative benefit analysis, for the most part, will have to be qualitative and subjective in nature.

The basic goal for an electronic system has to be in-home access to information. Such a goal can be realized if the state begins to establish its legal access and commits the funds necessary to develop such a system soon. If realized, there will be virtually complete public access through telephones, computers and television sets within the state, the single responsibility being to keep accurate information at major geographic centers throughout the state. It must also be understood that some existing information dissemination techniques must be kept even if electronic systems are installed. The principal cost benefit in going to electronics is in the need to expand public access to information.

The Existing Approach

Table 12

Information Management Consideration	Relative Benefits/ Opportunities	Relative Problems/Cost Inefficiencies	Impact
I. Identification and Gathering of Raw Information	Needs are known	(1) Time and staff consumption (2) Data management	(1) Costs are known (2) Easly influenced by budget cuts
II. Information Manipulation. Formatting and Storage	(1) Provide for staff review (2) Easy to communi-cate between cooperating parties	(1) Misplaced in-formation (2) Redundant collection (3) Costly to revise (4) Difficult and costly to manipulate and analyze	High and visable costs results in reduced effort
III. Information Dissemination	(1) Provides reference materials (2) Flexibility in access once disseminated (3) Provides attractive presentation of materials	(1) Slow. not timely (2) Low reliability of reaching target audience (3) Difficult to coor-dinate between agencies. therefore redundant information and costly dupli-cation of effort (4) Very few cost efficiencies with expanded coverage (5) No chance of satisfying a majority of public need	(1) Traveler following incorrect. unwanted or unnecessary routes of travel (2) Unintended viola-tions of restrictions, requirements and regulations (3) Unnecessary traveler inconveniences and hazards and lack of preparedness (4) Missed recreational activities or use of conveniences (5) Tendency for prod-uction/dissemination quantity to be held down and use of good information discouraged (6) Unnecessary complaints
IV. Information Update		(1) Redundant printing of unchanged information	(1) Higher costs (2) Also leads to impacts (1),(2),(3), (4) and (6) of III. above
V. Information Access	Information is in traditional. familiar forms	(1) It is often difficult for user to secure information (2) Source of partic-ular information is often unknown or unclear. User must go several places	Creates the tend-ency not to use which leads to impacts (1),(2),(3),(4) and (6) of III. above, even though the information is in traditional, familiar forms

The Electronic Approach

Table 13

Information Management Consideration	Relative Benefits/ Opportunities	Relative Problems/Cost Inefficiencies	Impact
I. Identification and Gathering of Raw Information	Use of electronic network for data gathering	(1) Needs are not completely known (2) Not all state staff are mentally or technically ready	(1) Reduced cost for information gathering (2) More recent data (3) Danger of hidden costs
II. Information Manipulation, Formatting and Storage	(1) Electronically stored (2) Redundant collection greatly reduced (3) Electronically manipulated and verified	(1) Staff training (2) System breakdowns (3) Change in some information formats	More efficient agency information manipulation formatting and storage costs
III. Information Dissemination	(1) Very fast dissemination (2) Can have high reliability of reaching target audience (3) Virtually eliminates duplication of effort (4) Large cost efficiencies with expanded coverage (5) More public access	(1) Not all people will have immediate access (2) People will need to learn how to access information (3) Printed reference materials are limited	(1) Improved, energy efficient travel (2) Improved enforcement of restrictions, requirements and regulations (3) Improved traveler preparedness for hazards and less inconveniences (4) More and better use of state resources (5) Expanded quantity of information. This will lead to lower relative costs (6) Fewer complaints (7) Better service to public (8) For an extended period of time, both existing and electronic systems will need to be maintained
IV. Information Update	(1) Zero redundancy necessary (2) Updates can be immediate	Added state responsibilities	(1) Can reduce the cost of information updating (2) Also leads to impacts (1),(2),(3), (4) and (6) of III. above
V. Information Access	(1) Information will eventually go to user with in-home access (2) Source of information will be clear and found in the home or in a state location	(1) Information is in less familiar non-traditional forms (2) Source, i.e. access sites, requires more positive action by the public	(1) Information will be much easier to use and understand which would lead to impacts (1),(2),(3), (4) and (6) of III. above (2) Public may have some resistance to using

Summary

Table 14

Information Management Consideration	Existing Approach	Electronic Approach
VI. Summary Effect On Information Quantity, Quality, Usability Content and Operating Costs	(1) Quantity, quality content and usability is less than with electronics (2) Missed agency goals (3) Little creation of energy efficient travel and lower than possible use of state resources (4) Cost inefficiencies in data gathering, manipulation, formatting storage, dissemination, and updating (5) State staff is familiar with current methods (6) The public expects certain existing materials	(1) Better quantity, quality, and more cost effective (2) Electronics would have the capacity to do many new things at no additional cost, beyond those for increasing the use of state resources, creating travel related energy efficiencies and creating cost efficiencies (3) Electronics could be a revenue generator for the state (4) Electronics allows for customized service (5) Electronics would greatly increase and enhance the public image and the real and public perceived value of the agency's information dissemination work, thus encouraging better funding of agency operations (6) Requires a larger fixed non-reversible dollar commitment (7) Requires more planning and research than traditional methods (8) Public acceptance is not known (9) Public education program will have to be undertaken

Using New Electronic Techniques

New technological options involve some form of computerized data processing coupled with electronic information dissemination. The flexibility and capacity of a computer/electronic system could make one system capable of handling many of the needs of the state. Consequently, in terms of economic benefit, the consolidation approach is the way to apply this analysis, i.e., one system to be shared by all agencies. It should not be interpreted that this alternative necessarily means a centralized computer system, which houses all data from all agencies, with each agency accessing some kind of central data base. In the current age of the greatly expanded capabilities of decentralized microprocessors, linked by communication paths, the large centralized systems have varying degrees of applicability.

The existing approach to public information dissemination is based principally on printed materials and staff time. It should also be noted that if dissemination is to be expanded, these two areas are the most logical choices if alternatives are not developed. Printed materials and staff time increases and carries with them an almost proportionate increase in operating costs, while the electronic approach affords the possibility of increasing dissemination without proportionate increases beyond the initial investment. Electronic systems can provide not only zero cost change over the producing life of the system, but the absolute dollar cost of computer systems per unit of information disseminated is falling each year.

The state electronic information system, to be practical, must be founded on the structure of the state providing electronic access in key areas. People will either travel to the state location, or remotely access the data from the state computer(s) through telephones, computers or cable TV. Such a system expands public access to accurate information, yet places dissemination responsibilities largely in the hands of the user. There are three principal cost issues that must be addressed in order to evaluate the practicality of this goal. First, is the cost of developing the hardware and software for such a network. The second is the cost to maintain the system—staff and hardware/software. Finally, what the costs will be for sending information from Olympia to the key information areas.

Developmental Costs

If the state agrees that the lack of information is preventing the public from receiving necessary information and that the lack of same is having adverse economic effects, then the electronics alternative is worth pursuing. Based upon our evaluation of the agencies we interviewed, they have such a low financial commitment to information that an electronic system cannot be justified by reducing current operating costs. On the other hand, even a moderate expansion of existing systems does not seem warranted without serious consideration of electronic alternatives.

As mentioned previously, the goal of a state electronic system is to provide citizens and visitors alike with electronic information from their home, motel room, and at key state locations. Technically, the system requires that the state deliver information at certain locations in the state and then interface that data with remote peripheral electronic equipment located in that area. The peripheral equipment includes walk-in access stations on state property, home and business computers that can communicate with the state equipment, the telephone, which can deliver voice synthesis responses, and interfaces with cable and broadcast TV stations.

The costs for the state are to provide the data to major information centers. The dissemination or access to the data becomes the users responsibility. Costs for a system that can satisfy the needs of the agencies involved in this project fall into three phased actions.

1. An information center located on existing state property where some information is updated remotely and other data requires a local effort. Base system, $250,000 and $60,000 per information center. (This is outlined in Chapter V.)

2. System modification at the remote information centers which allows local telephone, computer and television interface. $20,000 to $50,000 per site.

3. A statewide communication network which allows all updates from Olympia and carries other state agency data. The costs for this portion of a system will have to be determined at a later date.

The cost of state information centers will vary to some degree based on the population in the area. The variable is the number of user stations made available and the number of people that can remotely interact with the state data base at one time. This

means that a system in Seattle may need to be larger than a Yakima site. At this point, however, without actual use data we are estimating the need for 21 systems located at strategic points in the state for comparative purposes.

It should be noted that the emphasis of the information system is based on point of origin and key intercept points. Therefore, we are not recommending that remote areas such as "rest stops" be the principal point of information storage. We do see, however, certain rest stops as being users of the information located at the information center areas.

The following information centers are based on population statewide coverage and anticipated use. To expand the system beyond this list is most likely not to be cost effective unless phase III, networking, is put into effect. With a sophisticated networking system, the costs to add locations will be reduced to make it practical for smaller communities to receive information locally as well. There are also other ways for other state agencies to carry some public information in these smaller communities if necessary.

Information Storage Sites	Initial Costs*	Information Storage Sites	Initial Costs*
Aberdeen	$ 80,000	Renton	$ 80,000
Anacortes	80,000	Seattle	200,000
Bellevue	100,000	Shelton	80,000
Bremerton	80,000	Spokane	80,000
Centralia	80,000	Tacoma	80,000
Ellensburg	80,000	Vancouver	80,000
Everett	80,000	Walla Walla	80,000
Kennewick	80,000	Wenatchee	80,000
Moses Lake	80,000	Yakima	80,000
Olympia	80,000		
Port Angeles	80,000	**Total**	**$ 1,820,000**

*Initial costs are based on equipment being located in existing state facilities. No housing costs for the equipment has been budgeted. Above costs do include limited local remote access to state information centers.

Maintenance Costs

The costs to maintain the system fall into two areas. First, state staff time to keep the information up to date, and second, the costs required to maintain software and hardware.

There will be no additional state agency staff time required to maintain the electronic information data base unless the level of information is dramatically increased. It is expected that the electronic system will not only keep a lid on existing costs, but could even marginally decrease operating costs. With an electronic system, a consistent public information program can be undertaken with minimum operating expense. Further, it is anticipated that existing staff can be trained to update information within the electronic system.

The costs to maintain hardware and software for a system like the one proposed here, will be approximately 10 to 12 percent of the total project cost per year. Therefore, a $2,000,000 state project will run approximately $200,000 per year.

Networking Costs

The means of communicating from Olympia to the remote information centers throughout the state is a factor that must be considered. While the system outlined here can use telephone lines as the link between centers, it is the expansion of effort that must be considered now. Networking is concerned with two areas. First, the means of getting from Olympia to the state information centers, and second, getting information from these centers to the public.

First, the system outlined in this report can adequately be updated by telephone line with little or no added costs to the state. Existing phone connections from Olympia to state offices can be used and time required for updating will be small. The justification for expanding to a more sophisticated communication link will have to be justified by the state deciding to carry all state related communications on its own or a leased high technology network. This is an option that should be given serious consideration because of limited availability of links that can be issued by government agencies.

Access from the state information centers to remote sites will take place principally through telephone, cable and broadcast TV links. The telephone line will serve as a link for voice synthesis responses, other computers, and in some cases the home television set. By the state providing a local or regional call or even an 800 number, the public can have access to necessary information at a cost savings. With the telephone as the link, there are limitations to the types of images that can be transmitted. Alphanumeric messages and some simple computer graphics can be sent. Photographic or moving images, via telephone, are not practical at this time. The cost factor for the state for telephone access is limited and, therefore, has not been considered as a cost factor for this project.

Second, through cable, perhaps broadcast TV interfaces, the state can deliver two-way communication to remote sites. The image quality and flexibility with cable can be every bit as good as the information being provided at the state information centers. The image quality with broadcast TV "Viewdata" is limited to simple graphics and alphanumeric messages. The cable TV and telephone links will be the most important state links in the network, primarily because of availability and volume. The typical new cable TV franchise provides for a number of two-way communication links and for a number of public service channels. While there is not much the state can do with the telephone, there is much that can be done to secure cable TV access. The state should, either through negotiation or legislation, secure a to-be-determined number of channels for public information. There is limited, and perhaps no costs, for a cable franchise to add this feature to its own network. It is important to undertake this effort now in order not to be locked out later for technical or financial reasons.

If local broadcast stations are willing to carry state information on their "Viewdata" channels, we certainly do encourage it. If "Viewdata" is to grow in the U.S. it will have to be a financial success. Because of its limited capacity we doubt "Viewdata" can be counted on for long range needs.

The state needs to initiate action in the networking area. There will be limited operating costs associated with remote access if the state secures its position in the market. If too much time passes before activity, costs to lease space will be prohibitive because of the capacity need to secure public access. We have not budgeted networking costs as part of this project.

Cost/Benefit

The costs of the 21 statewide information centers is in the $2,000,000 range with an annual hardware/software maintenance cost of $200,000. Applying an electronic processing industry capital life assumption of 10 years and an interest rate of 15 percent, the annual operating costs would be around $500,000 per year, including maintenance. The costs of the electronic system must be compared to the alternative traditional methods. The cost question must also consider whether an expenditure of this kind in any form is needed.

The cost comparison between electronics and traditional means can be drawn if public information is to be expanded from its present level. There will always be a need for people to prepare the information and for printed materials to be made available. The costs to expand the traditional telephone or printed material programs is relative to the degree of expansion. The commitment level can grow to whatever level the state were to let it. It is safe to figure that each telephone call will cost the state one dollar to three dollars in staff time alone. Each piece of custom literature sent will cost between 50 cents and one dollar to process and distribute. For example, the Secretary of State Office for the State of Washington spends in excess of $400,000 for their voters information pamphlet, which is mailed to the 1,800,00 households in the state. This represents one mailing of the same piece of literature to all state households. There is no point in considering the costs of a major expansion of traditional information methods.

The second issue is whether or not a major expansion of information access is needed. It can be argued that people are "getting by" without it, so therefore it is not needed. The principal purpose of an expansion effort has to be either to save the state operating costs or increase revenues. Because this kind of project has never been undertaken before, it is not possible to site direct parallels. But we can look to the private sector and to other related public service fields for direction. The communication explosion is taking place not because it's a new gimmick, but because it saves businesses and people time and money. New technology saves money because it provides information in a timely, easy to access and accurate way far more efficiently than traditional means. By being more efficient it saves in labor intensive efforts. By being more timely it helps avoid errors, and allows better decisions. Because it's easy to access from the home, business and other areas, people can gather consolidated yet pointed information when they need it. Real time updated information allows peo-

ple to avoid mistakes before they happen and by being more aware of opportunities, they spend their time doing what they enjoy rather than looking for things to do. As a result, airlines have been able to reduce operating costs and provide their customers with more convenient services. Public transit agencies have been able to reduce operating costs and increase revenues. Businesses have cut down on travel expenditures. The reasons list can go on to include virtually all types of businesses in the United States.

The largest revenue opportunity for the State of Washington is in increasing resident and tourist travel expenditures. This state does not have the central attractions, e.g. Disneyland, that other states have. Washington offers any number of interesting, scenic, northwest, cultural and participatory activities. Washington attractions tend to be small and personal and are spread all over the state. Tourist dollars will soon be this states second largest industry which accounts for 2.4 billion dollars annually in Washington State. An information system that costs $500,000 a year that can encourage people to stay longer and spend more won't take long to more than pay for itself.

As mentioned previously, reductions in current operating costs for the exclusive purpose of providing public information is not likely to account for a $500,000 annual savings. The straight reductions on personnel and materials could easily run in the $100,000 to $150,000 area. If the system is, however, expanded to include the transmission of other state agency data and include operational and public information data, the cooperating costs conclusion would be much different. We cannot quantify the economic impact of reductions in energy consumption, law enforcement and maintenance that will occur from a statewide information system at this time. The only way of measuring these types of impacts will be to demonstrate the system, then analyze results.

Considering quality issues, attempts to "quantify" quality in terms of units of benefit, does, of course, involve a great degree of subjectivity. To be a worthwhile input into decision making, these must relate to "significant" quality distinctions in terms of perceived customer value or operational benefits. Quality is a measurement of essential characteristics or attributes that may not be considered under the typical cost/benefit analysis. In this case, however, the state has the responsibility of providing the public with information. Therefore, it is responsible to consider characteristics like usability, content, customer impact and reliability. In considering

these characteristics for this study, one significant point emerged. The quality of information dissemination is fundamentally dependent upon how easy it is to access and how timely and accurate it is. An example of costly and irritating impacts are when conflicting information about road conditions on a mountain pass, or a message to a traveler that an open recreation spot was closed and a closed one open are provided. A conceptual example of quality is a TV monitor readout of a strip highway map combined with a highway construction report showing the availabiliiy of hotels, motels, recreational areas, and fishing conditions at the available recreational sites, all provided in the home. Such a package of information would create multiple benefits to both user and state agencies that would not exist if this information were not so packaged. It would facilitate and enhance energy efficiency, better utilization of state resources and provide a positive feedback to cost efficient joint venture operations between state agencies and the private sector. The state has enough population. The subject is now complex and important enough to conclude that traditional means of information dissemination cannot provide quality information according to today's standards.

V. Specific Applications in Washington State— Conducting a Demonstration Project

Previous chapters have concluded that an electronic information system could be a cost effective dissemination method. However, since an electronic system like the one needed does not exist, it is recommended that a pilot project to further test the feasibility of such a system be undertaken. This chapter discusses what should be considered for such a pilot project, and identifies its basic characteristics and expected results. The second part of this chapter expands from the considerations related to the pilot project, into a discussion of the main considerations affecting a statewide application of such a system.

A Pilot Project

The pilot project's primary mission is to test public use and acceptance and the ability of several public agencies to coordinate their dissemination efforts. Technology that has proven to be reliable and useful in other applications is available for a pilot project.

Project Purpose

A pilot project must be influenced by the following purposes:

- Measure resident and visitor use
- Measure economic impacts
- Establish interagency working relationships
- Create public awareness
- Satisfy the needs of the user and state agencies
- Provide data to complete a cost benefit analysis

Information Contributors

All agencies should be encouraged to be information contributors. As this report has discussed, the greater the joint participation, the better the application. In particular the following agencies should participate:

- Washington State Department of Transportation
- Department of Commerce & Economic Development
- Department of Fisheries

- Department of Game
- Washington State Parks & Recreation Commission
- Others if able

Information Formats

The information provided to the public must be developed from the users' point of view. Therefore, information must be consolidated from all cooperating agencies and be provided as an integrated information system. Further, the delivery must be precise, yet comprehensive.

In order to accomplish a pilot project, the following system characteristics need to be provided:

- Provide consolidation information based on user needs.

- Provide accurate, up to the minute information (real time data).

- Allow multiple user access to data base.

- Must be easy to use and easily updated.

- The system must provide visual images in alphanumeric, computer graphic and possibly photographic forms. Audio and hardcopy features should be able to be added to the system.

- The system should be expandable to allow maximum remote public access to the same data base.

Electronic Alternatives Available for a Pilot Project

The type of electronic information systems available are discussed in Chapter III. The principal user form for a statewide information system has to be a TV monitor. The monitor is the only form that can generate the complexity of information needed at a reasonable speed. Other peripheral technologies such as large scale displays, hardcopy printers and voice synthesis features can be added, but will not serve the principal role in a state system.

The next decision has to be the means and costs of getting information onto the monitors. Costs are greater for a full color rather than black and white system. Increases in cost also occur when a system provides computer graphics and photographic images in addition to alphanumeric messages. To test the low end of the spectrum, a black and white alphanumeric system, which could cost 60 percent of the more complex system, is not recommended. The nature of the data being provided dictates a color system with full capabilities as the principal format. There will be people who can access the same data base in a simpler form, but it should not be limited during the pilot project phase.

The goal for public access to the state information system is to ultimately provide information into every home and most businesses in the state. The accomplishment of this goal relies on the placement of data in key information centers throughout the state, which will allow the public to request information needs. The only practical way to begin this process is to locate information on state property and disperse data to users (individuals, cable and broadcast TV stations) in the area. It is important that the state place tight control on the data during the pilot phase. After the system is running correctly, it can then be opened up for more access.

Pilot Project Locations

The most desirable locations for the pilot project would be places having concentrations of people with immediate need for a variety of travel related information. This project is best tested in such an environment, especially when the people using the system are visitors and unfamiliar with our state. If the system can provide its usefulness under such conditions then it would appear worthy of expansion to more use by residents of the State of Washington. Therefore, the recommended locations are at key points of entry. These locations will also have the most immediate impact on increasing state revenues.

State Information Centers:
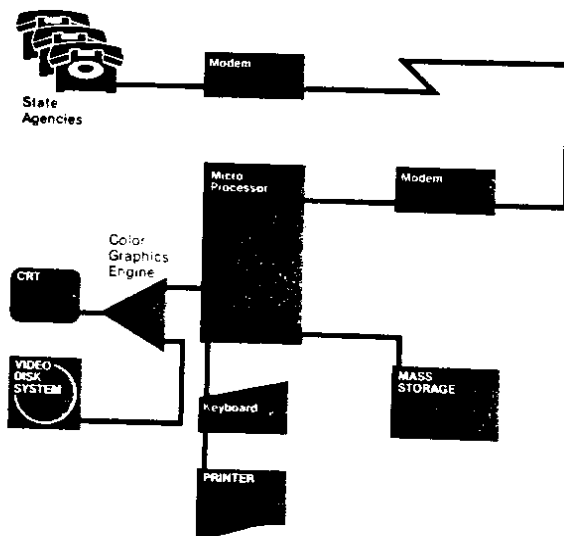- Spokane
- Vancouver
- Blaine
- Olympia
Sea-Tac International Airport

System Characteristics

* Color TV monitors
* Systems capability must include full color, alphanumeric messages, photographs and computer generated graphics
* User keypad
* Hardcopy alphanumeric printers
* Up to the minute information from Olympia

The Demonstration System

Figure 5

Data Collection

The pilot project system must be able to collect information by recording the following types of information:

* Number of users (by day and time)
* Programs used (completed and partial)
* Demographics of users
* Satisfaction of users

Pilot Project Costs

There needs to be two phases to the pilot project. The first phase sets up the base or first operating system. This phase organizes the data, develops the software and hardware, trains staff and debuggs the system. The second phase moves the system into public use. It is estimated that the following budgets will cover the pilot project.

Phase I — Base System, $250,000
Phase II — Public Sites, $60,000 per site

The project time allowed for Phase I should be four to six months. Phase II can occur concurrently, or follow after Phase I evaluation. Phase II will require an additional four to six months, if it follows Phase I.

A Statewide System

The pilot project's purpose is to demonstrate the public acceptance of computer generated information. However, the best cost/benefits will come if a statewide system with multiple points of public and state agency access is created. There are three considerations that follow the pilot project. First is expanding access to more state areas. Second is expanding the public access to the information center's data base. Third is deciding on the communication network which will connect all these information centers. The decision on expansion to other areas needs to wait until after the pilot project evaluation. The work on public access and networking can begin once the decision to proceed with a pilot project has been made.

The two principal means of access by the public to the information centers will be telephone lines (computer to computer) and cable TV (state information center to cable TV transmitter to home). The growth of the small computer industry is tremendous. Each computer that has the ability to communicate beyond itself to remote sites can tap into the state system. There is really nothing that needs to be done about this expansion except plan to allow remote access.

The situation with cable TV franchises is different. The new cable installations include 40 to 105 channels and provide for two-way communication on some of these channels. Two-way communication allows the user, from their home, to capture selected information or query a remote data base to shop, bank, be entertained and hopefully

gather public information from the state. With each franchise the municipalities and states involved must approve licenses. Typically, each issued license today includes a number of public use channels. The state needs to pass legislation or negotiate with each new or renewed franchise for the right to have selected channels reserved exclusively for state information. The time to do this is now, before the use of cable catches on as it is projected to do over the next ten years. Today, 50 to 105 channels is more than necessary; in ten years it won't be enough.

The issue of networking requires a separate discussion. Networking is the area where the state stands to save the greatest amount of operating revenues, but only if the use of the network expands beyond the subject areas discussed in this report. The information system described here, which connects Olympia to some 21 other areas in the state, can be adequately and cost effectively maintained by telephone lines.

If, on the other hand, the State of Washington relies on a leased voice and data communication network for all its communication, it will be faced with rapidly growing costs and the possibility of a system that because of costs will limit public communication within the state. The state will find it difficult to stabilize or lower its annual network operating costs as new, more efficient communication technology becomes more widely used. The state has not conducted a complete evaluation of current network costs, but available data indicate that they are in the $12 million range annually, for long distance services alone. Therefore, it is recommended that the state pursue the feasibility of implementing its own communication network.

Network Outline

The system is visualized as something like this:

First, these would be a state controlled communication link to major state properties. The technology would most likely consist of microwave and fiber optics. The state could purchase, or lease, the system and operate it or have an outside firm manage it. The link would connect state offices, ports of entry and other state facilities throughout the state.

Second, the state network could locally interface with other city and county systems, e.g. cable television, broadcast stations, and even major retail and business locations. Access to the network would be through:

- State agency equipment
- In-home cable television
- Local telephone call via voice synthesis
- Home, institutional, and business computers

Conceptual State Communication Network   Figure 6
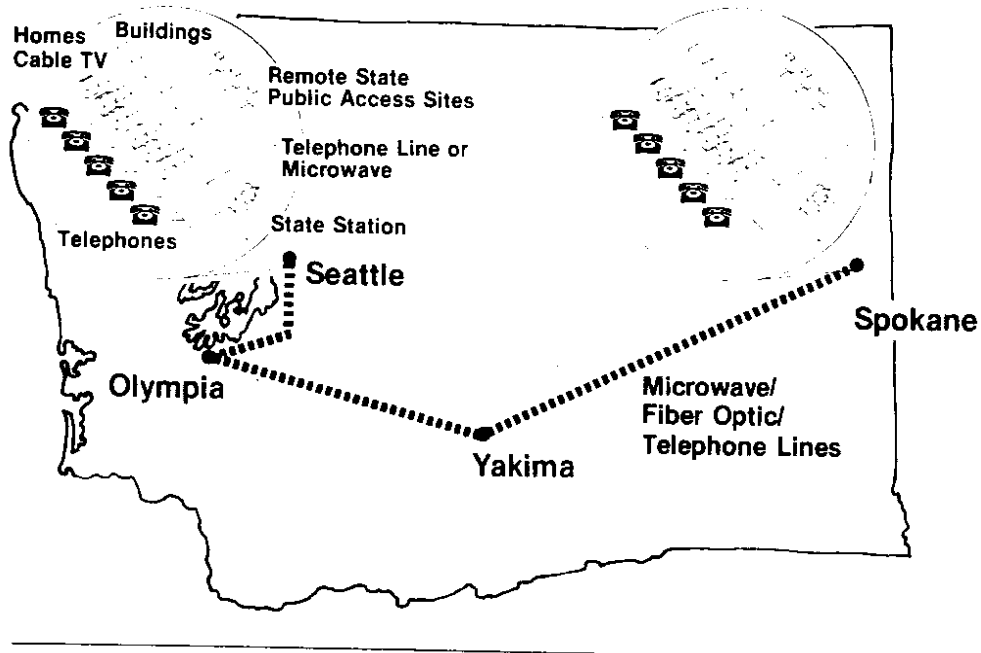
Such a network would allow all persons with access to a telephone, computer, or two way cable television hookup to find most of the information they need from all state agencies. Presently, private communication networking in this state is such that legislation and commitment of resources can create a public network. As more cable TV, microwave and other communication network licenses are issued, without the

state having made its position clear, the opportunity will decrease. Ultimately, what will happen, if action is not taken soon, is that the state will experience annually increasing costs and miss the chance to provide comprehensive and inexpensive contact with the people of this state.

Summary Comments

In conclusion, there are a number of principal tasks that need to be undertaken to determine the feasibility of a statewide public network:

* The pilot project would have to be installed and evaluated.

* Present state lease costs for voice and data communication would have to be collected.

* A determination would be needed regarding opportunities for creating efficiency through improved communications.

* Legislation should be passed which allows free public access to all non-broadcast communication networks.

* The conceptual public network identified in this report would have to be expanded to include:

  - Drawings and/or tables of a proposed network layout and its connections to geographic regions throughout the state. These drawings and/or tables would have to identify the technology options, the backbone route and spurs of the network. The number of channels allocated to each band would have to be identified per each leg of the route. All path profiles, terminal locations, tower and antenna requirements, hop distances in miles, and functional block diagrams of equipment to be used at each site would have to be identified.

  - A mutual interference analysis of the available microwave bands required by the state. This work would have to identify if there is sufficient channel space available to provide present and future loads without interference from either existing microwave systems.

- A rainfall attenuation curve responding to those frequency bands and the rainfall attenuation that can exist. This task should determine proper lengths, fade margin, and antenna heights to assure maximum propagation reliability.

- A detailed capital cost estimate for alternative networks. This estimate would have to address the:

    Cost of each site
    Cost for each link
    Cost for each channel drop
    Cost for channel inserts
    Total estimate for installation of entire system
    Recurring costs
    Operating costs
    Maintenance costs

- A description of methods of expansion.

- An in-depth overview of FCC rules and regulations.

- A cost comparison of state owned and maintained facilities and channels versus the leasing of such services from private instrastate carriers.

Problems of Installing and Maintaining Electronic Systems

There are problems associated with the installation and maintenance of traditional or electronic information systems. While the electronic system cuts down on labor intensive efforts and expands dissemination, it establishes a set of conditions that must be managed. Electronic systems require people to enter new information, and also software and hardware must be maintained.

Information Entry

Exisitng state staff will have to be trained to operate the electronic system. This will not be a major undertaking as most software programs today are designed with the user, rather than the technician, in mind. Once training has been completed, new information will have to be put into the system as necessary. The state staff will be able to put in more information quicker and in greater detail than ever before. The only time impact will be in the collection of information that previously had been ignored or had no way of being put into an information system, e.g. a two hour wait at the downtown Seattle ferry terminal. It is anticipated that each state agency will be responsible for updating the information they are responsible for.

There should be no increase in personnel costs and quite likely cost reductions will take place after the system has been installed. The personnel required will be of the same types and classifications that currently exist in each state agency.

Software Maintenance

As programs change in structure, the software may need to be modified. For example, if an events schedule changes or if the format it is presented in is modified, this most likely will not require software change. On the other hand, if the state decides to add listings of motel availabilities on a route or tap into the U.S. Weather Bureau information, this will require a software change. An industry standard for figuring software changes of an evolving active system is 5 to 8 percent of the cost of the system per year. Software changes are, however, most often optional costs that can be controlled based on budget availabilities.

Hardware Maintenance

The reliability of computer systems grows each year. Today's computer systems run in the 96 percent to 98 percent reliability range. To figure on repair and replacement parts, an industry standard is in the 10 to 12 percent of cost range. This work typically would be accomplished by a private subcontractor.

Another issue to consider is the environmental conditions for state information centers. There has been much accomplished over the last few years to account for adverse weather conditions and vandalism. Assuming the system is located indoors in some kind of controlled heat environment, there is really nothing special that needs to be done to the location. If the unit is located outdoors, then dirt, temperature, and moisture need to be considered. These environmental factors have been dealt with successfully in the past and should not be considered a deterrent for the state.

The most vulnerable location for any equipment is an out of the way, dark environment without people around. A state location with staff should experience little if no vandalism. Systems are built to handle rough use by children and enthusiastic people. Units located out of doors in an activity area similar to a bank cash machine will receive some abuse, but again not serious enough not to consider drive-up information centers. The out of the way "rest stop" could be another story. An information unit can take some abuse by installing breakaway keypads, covering TV monitors with plastic and leaving out the hardcopy feature. If, however, someone used a blow torch, dynamite or a chain saw, the unit would receive considerable damage. There are ways to make the system vandal resistent, but not vandal proof. The "rest stop" type of installation will have to be given special design considerations such as installing it outside under the lights, or installing unauthorized access signals to the state patrol or sirens. It seems likely that the information available at the rest stops ought to be tied specifically to the motorist needs and, therefore might be simpler than an information center location.

Routine abuse costs can be accommodated for in the hardware maintenance budget. Major vandalism will need to be covered by insurance or on an as needed basis. If certain locations appear to be expensive to maintain, obviously they need to be avoided.

Successful information/transaction systems have been installed by banks all over the United States. The airport and public transportation industries are also beginning to use electronic systems in public places. Adverse environmental conditions should not affect the success of an electronic information system.

VI. Operations of an Electronic Information System

Creating a statewide electronic information system requires the satisfaction of three principal roles: (1) locating the required funding for a demonstration, and a statewide program; (2) locating the hardware/software system that can satisfy the project needs; and (3) crediting the state management process for maintaining the system.

Funding

The funding sources for a project such as this will have to come from public funding. It is unlikely that private sector sources that incorporate advertising or some kind of transactions (e.g. motel reservations) will pay for the system. If private sector information is brought into the system, it could help cut some of the annual operating costs, however.

Public funding can come from federal highway sources if it is part of the state's annual allocation of FHWA funds. Special FHWA grants may be a possibility, but in the present political climate it will be difficult. The other option is to secure funds from budgets or special appropriations of the state agencies that will be involved in the project. The proportion of funding will obviously need to be decided by the state. It does seem, however, that the Washington State Department of Transportation and the Department of Commerce and Economic Development, because of their public information responsibilities, are the obvious agencies to assume a majority of the funding responsibility.

An option to the direct purchase of the system would be to lease for a five year period. Leasing will cost the state more, but would not require the initial capital outlay.

Locating the Hardware/Software System

The state electronic information system will require some custom work, but mostly in the software area. The hardware required to operate a state system, as described in this document, exists. The operating software for the hardware system is also available on the market. The only customer software activity needed is incorporating the user programs. While this type of software is time consuming, there is no unknown risks in creating it for the state project. The time required to develop the software is predictable.

Normal procurement processes will locate the contractor needed to develop the state system.

The Management Process

One major organizational point is that all cooperating agencies must be responsible for updating their own routine information. Further, it is not necessary to hire specialized technicians to use the equipment. Present staff, who have information responsibilities, can be trained to operate the equipment. The next major factor is deciding on who should be responsible for the electronic system. There is not a clear line of total responsibility. The Department of Transportation and DCED have the greatest need for the electronic system, but for different functions. While DCED has the responsibility of informing people before they become a motorist, DOT then provides information on routes of travel. Even if all cooperating agencies are paying for operations of the system, their needs to be a division of responsibility for overall management of the system. From an information management perspective, it seems that DCED should assume the responsibility of the system. From maintenance and information center locations perspectives, it seems logical to have DOT assume responsibility.

If a joint agreement is not possible, it then becomes a state decision as to who should have overall management responsibilities. From the perspective of the authors of this document, either agency could handle it. However, DCED would have to increase staff to accommodate the task.

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**Public Information Dissemination
in the
State of Washington:
Research Results**

by
Ilium Associates, Inc.
for
Forum Communications, Inc.

Washington State
Transportation Center (TRAC)

prepared for

Washington State
Department of Transportation

in cooperation with

U.S. Department of Transportation
and
Federal Highway Administration

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Table of Contents

I. Introduction

The Washington State Department of Transportation (DOT), Washington State Transportation Center (TRAC), Forum Communications, Inc. and Ilium Associates, Inc. selected several state agencies to interview regarding information communication requirements. The agencies selected were those identified as having the greatest need to communicate their information to the traveling public. Those agencies were:

Department of Transportation (DOT)
Department of Fisheries (Fisheries)
Department of Commerce & Economic Development (DCED)
Department of Game (Game)
Washington State Parks & Recreation Commission (State Parks)
State Patrol (SP)
Emergency Services (ES)

A team from Ilium Associates, Inc., Forum Communications, Inc. and DOT conducted fact-finding discussions with representatives from each of the above mentioned agencies. A survey questionnaire (see Appendix to Research Report) was developed and administered in an informal manner to Public Information officers or other designated officials from each of the participating agencies. The questionnaire was administered informally in order to encourage an elaboration of the points being addressed in the discussion. Discussions were held in-person and followed by supplemental telephone interviews. The discussions were quite fruitful because, without exception, each agency was cooperative, helpful and eager to supply the team with answers and suggestions.

II. Results

Generally speaking, each state agency has its own public affairs office which is charged with disseminating information to the public. Each agency, however, has a different type of information that it needs to communicate; for example, the Department of Fisheries has a need to communicate immediate emergency regulations whereas the Deparment of Commerce and Economic Development needs to communicate the benefits of visiting the State of Washington on a more long-term and constant basis. Figure 2-1 illustrates the differences and similarities between the interviewed agencies regarding the nature of information required for dissemination.

Requirements for Information Dissemination

Figure 2-1

	DOT	Fisheries	DCED	Game	Parks	SP	ES
On-going	X		X			O	
Seasonal	X	X		X	X		
Intermittent	X	X				X	X
Immediate	O	X			O	X	X
Long Term	X		X			O	
Short Term	O	X		X	X		
Changing	O	X			O	X	X
Static	X		X	X			

X = always
O = occasionally

All agencies interviewed provide information to the public in some form or another. All of the agencies provide the various media with press releases, but that responsbility is the only one which is handled similarly within each agency. Although several agencies publish informational brochures/pamphlets, each agency has its own method of prepar-

ing, publishing and distributing the pamphlets. These differences will be identified and discussed in a later section of this report. Figure 2-2 lists those information tools utilized by each of the various agencies.

Information Tools

Agency	Press Releases	Telephone	Direct Mail	Pamphlets/ Brochures	Other
Dept. of Transportation	X	"Sno-Line" toll-free in winter, re: pass conditions	Construction information compiled & sent out monthly	Ferry schedules, maps, carpooling brochure	Bulletin boards in rest areas, radio, changeable message signs
Dept.of Fisheries	X	Nothing formal	Mail all regulatory pamphlets to sports stores, licensing facilities & sports clubs, orgs.	1 regulation booklet-40 pgs. (Sport Fish)	—
Dept. of Commerce/ Economic Devel.	X	Nothing formal	By request and to all chambers & visitors bureaus	Several "lure" brochures mailed to tourist bureaus	About to institute campaign with television & print media
Dept. of Game	X	Nothing formal for information-only violations reports-toll free line	Regulatory brochures mailed to licensing facilities & anyone who requests	Trapping regs., hunting regs., fishing regs., several 1-time efforts	—
Parks & Recrea. Commission	X	Reservation system for certain state parks	By request	1 informational brochure per park & parks & rec. guide	—
State Patrol	X	Nothing formal	Nothing formal	Drunk driving, speeding-educ. type per grant with federal agency	—
Emergency Services	X	Nothing formal	Nothing formal	Very little- Mt. St. Helens ash fallout	Radio network for emergency use

With decreasing revenues and escalating costs, most agencies are faced with stretching budget dollars as far as possible. This has resulted in cutbacks in information activity budgets whereby only those informational items considered completely necessary are being included within the information package. For example, in the past, various divisions within the Department of Game produced some one-time informational pieces, e.g., the wildlife recreation area map. This type of activity and information piece is no longer being undertaken. In fact, the regulatory pamphlets that are produced every year by the Department of Game for hunters and game fishermen have even had to be revamped to save money. All agencies are looking for ways to save costs while still providing the necessary information to the public.

The following discussion individually examines each agency's information tools and process.

Department of Transportation (DOT)

Telephone Information

During the winter season, the DOT operates a telephone recorded message service to distribute information regarding pass conditions. This service is available in ten cities: Seattle, Bellingham, Everett, Ellensburg, Tacoma, Olympia, Longview/Kelso, Wenatchee, Spokane and Yakima. The service is not toll-free because operating a toll-free service is much more expensive than operating the ten lines. The service is set up by Pacific Northwest Bell. The service is also given some indirect distribution in that the radio stations call the number and broadcast the information on the air. The cost for operating "Sno-Line" is $14,000 to $19,000 per year. There are 900,000 to 1.2 million calls a year depending on severity of the winter.

The weather conditions are reported by the Highway Maintenance Crews to either Central Dispatch (Radio 10) in Seattle or Radio 5 in Yakima. These offices then compile a voice report and record it on the telephone answering equipment 6 times a day. The highway maintenance crews are already out sanding and plowing the highways; but these reports are considered a collateral duty. It is estimated that they spend 2 to 3 hours a day gathering and delivering the information to the dispatchers. At times, the crew is out of range for using their radios and must find a pay phone to call the information into the dispatcher. The same information which is used on Sno-Line is also recorded for the highway advisory radio. The radio communication will be discussed under a separate heading.

Direct Mail

The direct mail by the Department of Transportation consists of two items. The first is a monthly compilation of construction activities affecting the state highways. It is mailed to state agencies and other interested groups, such as AAA, American Automobile Association of Washington. The information is gathered from within the Department—from the Construction office which acts as the project administrator for state construction projects. The Public Affairs office has the responsibility of re-writing the report so that the technical language is taken out and it becomes understandable to the layman. The report is several pages long and contains only the state construction activity of major importance; no city/county projects are included. This project takes the Public Affairs staff 3 to 4 person days. It is then copied in-house. According to the Public Affairs office, this information piece is not as effective as it could be because it is to detailed for a general audience, yet not detailed enough for the newspapers. Currently there are plans to re-vamp the piece and combine it with the "motorist information report" which basically contains the same construction ac-tivity information, but also includes safety tips, symbol information and reminders about chains, etc. This will then be disseminated to a wider audience. At this time. the motorist information report goes to motorist organizations like AAA. When re-vamped, it will also go to governmental agencies and trucking organizations as well. The infor-mation for these two direct mail pieces are currently on computer. It is entered on the computer by DOT engineers, primarily for Construction office use; therefore, it is in technical form and language. The problem that the Public Affairs staff faces is how to extract the necessary public information from the technical language that exists on the computer.

Another direct mail piece involves bicycling information. This service is provided to persons who phone or write the Department of Transportation and ask for bicycling route information. They are sent a pamphlet which details the bicycle route, the pave-ment conditions. the grade of the highway, gas, food and lodging information. DOT receives between 500 and 1000 requests a year for this information. The Public Affairs Office would rather publish one booklet for the State of scenic bike paths/routes. At this time, it is handled part-time by one clerk on request. It is one of the publications currently being reviewed for its cost-effectiveness.

Pamphlets/Brochures

We have already mentioned the bicycle trip information brochure which is sent out on request.

There is also a map of the state highways published by DOT. They publish 500,000 every other year at a cost of $72,000. Approximately one-half of these maps are distributed by the Department of Commerce and Economic Development; the remainder are distributed to district offices of DOT, Chambers of Commerce, Parks and by response to requests from the public.

Quite recently the department published a public transportation map for the state. It has been distributed to the public through statewide travel organizations, and DOT is presently looking for other places to distribute the maps. The test run was 20,000 copies for $1,800.

Other

There are numerous other ways that DOT distributes information to the public. DOT is responsible for signs along the highway. Obviously, there are the regulatory signs for which DOT personnel are responsible. There is also some gas, food and lodging information disseminated via a special "logo sign" program. The DOT has an outdoor advertising staff of three full-time persons and four part-time persons. Their responsibilities include administering the federal and state regulations regarding billboards on the highway and administering the logo sign program which produces revenue for the motor vehicle fund. The logo sign program provides for space on signs constructed by the DOT for gas, food or lodging advertisers. The program is limited to highways outside urban areas.

Another dissemination method is through the highway rest areas. They include bulletin boards where the maps are posted as well as signs regarding activities around the state. Currently, the boards are not of uniform size, and updating is not done with any frequency due to lack of funds. Vandalism has been a problem, but with better lighting and preventive maintenance, conditions have improved somewhat.

Additionally, DOT operates HAR—Highway Advisory Radio. This service provides information about weather and road conditions that affect motorists crossing Snoqualmie Pass. Highway maintenance crews record the information for continuous broadcast over low power radio. There is a sign along the highway in North Bend for eastbound traffic and a sign along the highway in Cle Elum for westbound traffic, which blink to signal drivers to tune in to a radio broadcast of conditions on the pass. Because it is a supplementary responsibility of the highway maintenance crew, the report is not updated as often as is desirable. For that reason, conflicting information may be disseminated over the radio, on signs, and by state highway patrolmen.

The last dissemination method utilized by DOT is the changeable message sign. Currently, signs are located at two sites. One is at the ferry terminal in Anacortes, but apparently is not changed as often as possible. The other sign is located at district 4 on I-5, near Vancouver, Washington. This sign seems to be utilized properly most of the time.

Department of Fisheries (Fisheries)

Telephone Information

For the general public, no formal telephone information service exists at Fisheries. The department does operate a hotline for commercial fishermen and buyers. Up until 1979, Fisheries operated a "salmon hotline" which supplied the general public as well as the news media with information on where the sport salmon catches were occurring. The salmon hotline was too successful and too costly; therefore was discontinued. It had utilized 3 lines and averaged 1000 calls every 3 days during peak season.

The news media still calls to get information on where the best fishing is located. The catch data is reported to Fisheries by department sport samplers. One Public Affairs officer then compiles the information which takes approximately one-half a day. The news media calls on Mondays and Thursdays to receive the information.

Interestingly, Department of Social & Health Services (DSHS) has its own hotline regarding red tide. This is considered a health problem and responsibility for informing the public is delegated to DSHS.

Direct Mail

The regulatory pamphlets which will be discussed in the next sections are directly mailed to all sporting goods stores, marinas, sports organizations, and wherever licenses are issued. Out of the 350,000 pamphlets printed, 250,000 are mailed out for a mailing cost of $4,500.

Pamphlets/Brochures

Fisheries produces one brochure each year which contains the sport fishing regulations for the year. They produce 350,000 copies a year for a cost of $40,000. The amount printed is a reduction from 500,000. Because the recent court decisions regarding Indian and commercial fishing rights has had a tremendous effect on management of the resources, the general attitude is that the pamphlet is a forecast for the season. It is not lasting through the season by any means—it is out-of-date almost as soon as it is printed. Due to the complex regulations now in effect, there is more in-season management required and as a direct result, more emergency regulations and closures are issued. Fisheries must rely on the media to deliver the information because many times the closure order may be ordered at noon to go into effect at 6 p.m. This year, for example, there were 206 *emergency* regulations issued. Fisheries considers this to be their biggest problem. Although they inform local media and their own patrol personnel immediately, the information is not effectively disseminated. Fisheries also mail general news releases to other media around the state, but many times, the new regulation is already in effect when they mail out the release; therefore they must rely heavily on the broadcast media for dissemination.

Other

The Fisheries patrol personnel also disseminate information. They are, however, primarily in charge of enforcing the regulations.

Department of Commerce & Economic Development (DCED)

Telephone Information

Currently, there is no formal telephone service. Out-of-state companies interested in locating in Washington or tourists may call for information. They are then referred to whichever division can best help them with their questions.

Direct Mail

Lure brochure material is mailed to Chambers of Commerce and information centers around the state as well as to people who request information. The DCED is now in the process of evaluating *all* material put out by the department; therefore, we are not sure what will continue to be produced and/or mailed. Rather than simply mailing a packet of material to interested persons, DCED is looking at preparing personalized letters to accompany the material.

Pamphlets/Brochures

Because DCED is re-evaluating everything that has been or is now being produced, what we will now describe may not continue to exist or may be changed.

The bulk of material is lure brochures—those pamphlets lauding the beauty, and activities in Washington. They also print two calendars of events each year. They print a service brochure of 30-36 pages which contains a map, list of historical sites, parks and tourist attractions.

This department also disseminates a bulk of material prepared by other departments, and private industry, i.e., ski resort information.

Other

The department is looking at opening more information centers around the state. It plans to open four information centers at ports of entry around the state as a kick-off to this plan.

DCED has a budget item of $4.5 million dollars to be used to launch an advertising awareness campaign to lure tourists from neighboring states and Canada. Once here,

DCED has given thought to utilizing low power radio in areas around the state to broadcast attractions, or historical sites in the area. It is not doing this at the present time.

Department of Game (Game)

Telephone Information

The Department of Game has a hotline for reporting violations of hunting or game fishing regulations, but no formal information service line. They do receive some calls regarding where to go, where to purchase licenses and what the regulations are.

Direct Mail

The Department of Game mails their regulatory brochures to all licensing agencies at the beginning of the season. Because of budget constraints, this is the only mailing that takes place.

Pamphlets/Brochures

Each year, just before hunting season opens Game produces a brochure of hunting regulations and areas where hunting is allowed. It is produced on newsprint in red and black, and sent to all licensing agencies (900) in the state. The department views the gathering of the information as the responsibility of the hunter or fisherman. Unlike the Department of Fisheries, Game does not change regulations very often, therefore; most hunters know where to get information or they rely on prior knowledge.

Game also produces a Game fish regulatory booklet yearly which is distributed to the same licensing bureaus. In Washington, fishing is regulated by both the Deparment of Game for game fishing and the Department of Fisheries for sports fish and commercial fish. Depending on the type of fishing one will do, he may require two licenses. There is also a game bird and waterfowl regulatory booklet which is separate from the main hunting pamphlet. In addition, a trapping regulation booklet and a gold panning regulation booklet are produced.

In the past, Game has produced a wildlife recreation area map as well as other one-time information pieces; but because of budget restructuring, this is no longer done. At the present time, they still have a stock of the wildlife recreation map; therefore, these are still being distributed.

Other

Game used to host a booth at the Puyallup Fair. but this has been cut out due to lack of budget.

Parks and Recreation Commission (State Parks)

Telephone Information

During the summer season, State Parks operates a toll-free information number to give tourist/travelers information about state parks. Additionally, in 1980 they contracted to utilize a combination computer reservation system and park information center through the toll free number. Five operators and a supervisor were the permanent staff personnel assigned; relief time and catch-up for computer down-time was handled by other permanent staff members. Average time to make a reservation was three minutes for those who had necessary information, but double that amount for those who had questions; therefore overall the average call length was five minutes for reservations and two minutes for information only. A report by State Parks estimated 12 to 15 operators were needed at certain times in order to respond promptly. There were complaints regarding the lines being busy. The staff commented that the computer response time was very slow. The costs for the program were estimated by the contractor to be $35,000 for program development and $2,000/month for the four months of operation or $8,000. The actual cost was $35,000 for program development per the contract, but $117,475 over the four months. State Parks only paid $30,388 of the $117,475. Cost estimates for the 1981 season were $192,129 which were prohibitive under current budget restrictions; therefore State Parks used a manual reservation system in conjunction with the toll free information number at a cost of $89,000. Three operators manned the phones from May 1 through June 18; this was increased to four operators June 18 through September 4. Response time was two minutes. Callers were told to write directly to the park fourteen days in advance and pay a $2.00 reservation fee, or appear in person at the park 24 hours in advance of needing a site. The difference in the two systems, therefore, is that the manual system can only tell the person where to send his reservation request and fee. It cannot tell him how much space is available at the park or instantly reserve space for him.

Both the computerized and manual systems were used only in 15 parks of the 104 parks, but these represent over 1/3 of the available campsites.

Many calls are received requesting U.S. Park Service information. These are generally referred to the U.S. Park Service toll free number, but when the U.S. Park information is available, the operator may give it rather than referring the caller to another number.

Direct Mail

No direct mail program is currently in effect. State Parks does answer inquiries; but due to a limited mail/postage budget, many inquiries are now being routed to various agencies to also send requested material, such as DOT highway maps.

Pamphlets/Brochures

A guide to Parks was produced in the spring of 1981. There were 84,000 printed to last for two years, printing costs were $18,000. The guide lists state parks and recreational areas, as well as park regulations. It includes maps of park locations and a listing of activities offered at these state parks. Additionally, handouts for each park are being completed. Of 104 parks, 50 now have these handouts. They are one color, two-sided, (some with a fold out panel) pamphlets that describe the park and the activities that are offered. These are being designed and produced in-house.

Other

At times, State Parks uses a two-sided board at the ferry terminal to indicate that the state park at Moran is full. A couple of parks have low power radio capability, but the message remains static.

State Patrol (SP)

There is no formal information system. The patrol receives calls every time there is a noise that people do not recognize, or a major traffic tie-up.

The patrol also receives a large number of "Sno-Line" calls. They refer 99% of them back to the DOT Sno-Line. The patrol does not want to deal with these calls and would like DOT to extend the number of lines available for Sno-Line.

Direct Mail

There is no direct mail program.

Pamphlets/Brochures

They produce a few brochures dealing with traffic safety, liquor and driving, etc. They distribute these at liquor stores and state patrol offices. In the past, they were used in conjunction with the Traffic Safety Education Department program within the Patrol. Because of budget cutbacks, that department has been eliminated, therefore the distribution network for the brochures has been severely limited.

Other

The majority of the public information provided by the Patrol is related to accidents and is sent out to news media, especially radio stations for immediate delivery to the public.

Many Puget Sound radio stations have a phone with a special bell that goes off when the patrol has a major traffic problem to report. This system is called Sig-Alert. SP may also suggest alternate routing or a time schedule for how long may be required to clean up the tie-up.

The State Patrol also has a slide show that was produced for $45,000 that deals with traffic safety—drugs and drinking while driving. This is still being shown in high schools around the state.

The Patrol produces about 30 public service announcements each year for the broadcast media. It deals educationally with problems such as speeding, seat belts, alcohol and drugs.

An experiment called Operation CARE (Combined Accident Reduction Effort) was conducted over the 3 major summer holidays for 2 years (1979 and 1980). It was essentially a communication network in Bellevue. It consisted of an automatic phone and statewide toll free number given only to media. The media phoned in and was given weather information, traffic reports, accident reports and safety advice when necessary. They received 500 to 600 calls each holiday period. The program cost $15,000 to $20,000 over the two year period. Because of the budgetary problem, they cut it out this year.

Emergency Services (ES)

Telephone Information

Currently, no formal program exists.

Direct Mail

They do not maintain a formal program.

Pamphlets/Brochures

A few brochures relating to volcanic ash fallout and what to do in a volcanic eruption were produced after Mount St. Helens erupted. Generally, however, there is no public information distributed from this office unless there is an emergency situation, i.e., earthquake, nuclear disaster, major floods. ES has procured a number of pamphlets entitled "Disaster Driving" from the Federal Emergency Management Agency. These pamphlets are distributed to county agencies around the state and to individuals by request

Other

The Emergency Services office maintains an emergency broadcast system which was given $25,000 in 1981 to revamp its communication network capabilities. The new network will allow the entire state to receive emergency messages and allow different regions to deliver localized emergency broadcast information. The new system will be formally inaugurated March 4, 1982. The agency also maintains a communication center that constantly monitors teletypes, emergency radio systems, ham radio frequencies and law enforcement communications as well as monitoring the national weather system.

III. Specific Agency Suggestions For Change

The above results are an overall look at what exists. The following will be those ideas and suggestions that agency personnel have identified as desirable.

1. A computerized listing of park campsite availabilities.
2. Low power radio broadcasts of pass weather conditions in Seattle and Yakima or Ellensburg in addition to North Bend and Cle Elum.
3. Some kind of warning system of road conditions around the state including major construction delay problems and suggested alternate routing.
4. Immediate and on-the-spot notice of emergency fishing regulations.
5. Radio (low power) broadcasts of events/sites in the immediate area.
6. Private industry information—i.e., gas, food and lodging locations, operational hours, and availability.
7. Immediate area information such as gas, food, lodging, hospital, state patrol, bank locations; and emergency telephone numbers where help can be reached.
8. Licensing (sport information—where to obtain, costs, state rules and areas to go).
9. Ability to direct people to other parks or facilities in area when one park is full.
10. Highway safety tips—chains required, etc.

IV. Conclusions

The audience to whom the various state agencies are addressing their information has been broadly defined as the traveling public for purposes of this study. An examination of that definition reveals that the traveling public includes:

1. fishermen
2. hunters, trappers
3. tourists/vacationers
4. nature lovers
5. campers
6. hikers/mountain climbers
7. bicyclists
8. skiers, snowmobiles, snow-shoers
9. commercial truckers
10. business travelers

Their interests may be varied, but their information needs have some similarities. They need to know where they can stay while they are traveling, what kinds of delays there may be due to weather, construction or accidents and what services are available in a given location. It would be economically and physically infeasible for one agency to be able to compile and disseminate all the desired information using a manual method. Circumstances change too quickly, not to mention the budgetary and manpower constraints.

As a result of the fact-finding sessions conducted, we have identified the following information needs as those that the agencies currently provide in some form, or that they would like to provide. These information needs have been ranked as: mandatory, very useful, useful, or helpful.

DOT

1. road locations	mandatory
2. road conditions	very useful
3. ferry schedules & fees	mandatory
4. ferry delays	very useful
5. road closures/delays	very useful
6. rest area locations	useful
7. gas, food, lodging locations	very useful
8. availability/characteristics of lodging/food services	useful

Fisheries

1. licensing requirements/fees	mandatory
2. salmon fishing regulations	mandatory
3. regulatory changes	mandatory
4. successful fishing spots	useful

DCED

1. scenic attractions	mandatory
2. historical sites	mandatory
3. lodging, camping areas	very useful
4. recreational activities	mandatory
5. locations of banks, hospitals, police stations and post offices within tourist areas	useful

Game

1. licensing requirements/fees	mandatory
2. hunting, trapping, fishing regulations	mandatory
3. areas to hunt, fish, bird-watch, etc.	useful

State Parks

1. park locations	mandatory
2. park attractions	very useful
3. campsite availability	mandatory
4. fees	mandatory
5. park regulations	mandatory
6. other recreational activities, sites in park areas	very useful
7. alternative lodging	very useful
8. U.S. Park service parks	very useful

SP

1. emergency road/weather conditions	mandatory
2. accident problems	mandatory
3. safety tips	useful

ES

1. emergency situation tips   useful
2. disaster relocation/relief   mandatory

Based on the identified information needs of the traveling public, Ilium would recommend the following overall goal for the future:

Work with other state agencies to present a cohesive information package that allows the public access to as much of the information as it needs from one convenient source.

We further recommend that the following specific agency objectives would help to implement such a cohesive information package.

DOT: Make traveling through Washington easy, pleasant and enjoyable.

1. Provide a state highway map that is current, easy to use and contains pertinent ancillary data such as park locations, rest stops, etc.
2. Deliver with up-to-the-minute reports on road conditions and/or closures/delays.
3. Provide easily accessible ferry schedules and fee requirements.
4. Provide up-to-the-minute information on ferry delays and shutdowns.
5. Provide gas, food and lodging location information.

Fisheries: Make fishing in Washington an exciting and enjoyable experience.

1. Provide fee schedule, licensing requirements and fishing regulation information in as many places as possible to allow easy access.
2. Immediately notify fishermen of regulatory changes (on-the-spot).
3. Identify and inform fishermen of successful fishing areas/crowded places, alternative spots to try.

DCED: Lure tourists and travelers to explore Washington State with ease.

1. Provide detailed recreational information.
   a. activities available at sites
   b. fee to expect
   c. locations
   d. transportation available

    e. lodging available at sites (public and private)

    f. other services available at sites (post ofc., gas, food, etc.)

2. Provide easily accessible information at ports of entry.

Game: Make hunting and fishing in Washington an enjoyable experience.

1. Provide fee schedule, licensing requirements and hunting/fishing and trapping information in as many locations as possible.
2. Identify and inform public of successful areas for hunting/fishing/trapping and enjoyable out-of-doors.

State Parks: Make visiting state parks and other state forest areas an experience that will be repeated.

1. Provide location information, fee information and park regulation information in as many areas as possible.
2. Provide instant reservation capability.
3. Provide alternative information regarding surrounding areas (lodging).
4. Provide recreation information for both parks and surrounding area.

SP: Make highway travel through Washington State safe and easy.

1. Keep public informed of weather conditions.
2. Provide alternate route information when emergency situation arises.
3. Provide accident delay information

ES: Provide information for a traveler caught in an emergency situation.

1. Be able to immediately reach travelers who are caught away from home in a statewide emergency.
2. Provide safety information in hazardous conditions.

ILIUM ASSOCIATES

October 28, 1981

State of Washington
Transportation Information Project

Draft Questionnaire

Brief Introduction to explain purpose of project and visit to agency.

1. Do you provide information directly to the public?___Yes   ___No
   If yes, in what form?
        -over telephone
        -published pamphlets, brochures
        -direct mail
        -press releases
        -other, specify
   If no, do you provide information to other agencies/departments
   that do provide the information to the public? If so, in what form?
        -over telephone
        -inter-departmental memos
        -official releases, letters
        -on computer
        -other, specify

2. Is information dissemination your only responsibility? If so, are
   there other people on the staff who share this responsibility? If
   so, how many?

3. Do you have any idea in terms of hours or percentage of time spent,
   how much time is devoted to information dissemination?

4. Can you give me any idea of the amount of information you send out
   each year?

5. Explain the process that you go through to collect and prepare the
   information for release.

6. Are there any problems with this process?

7. Are there any improvements to the process that you would like to
   suggest?

8. How do you deliver the information to the public or other agency?

9. If the information is given directly to the public, are there any
   suggestions you would like to make regarding how the public receives
   the information?

If the information is given to another agency, do you know what happens to the information after it has left your hands? Do you have any kind of control on it once it has left your office?

10. What is the turn-around time from collection of information and final delivery to the public or other agency?

11. Do you have a budget for this service? What is that budget and how is it broken down? Is this amount a true reflection of the information budget or are there some costs picked up by other departments, budgets? Is this a standard budget compared to other years?

12. Do you receive calls or letters from out-of-state tourists asking for information?
If so, what information do they ask for? Do you have to refer them to another agency, department or phone number? If so, to whom are they referred? Would you rather have all the information at hand?

13. Do you receive calls or letters from Washington residents requesting information?
If so, what information do they request? Do you have to refer them to other agencies, departments or phone numbers? If so, to whom are they referred? Would you rather have all the information at hand?

14. Do you know what areas of the state these calls come from?

15. If you could provide constant, up-to-date information to the consumer, what information would you want to provide?

16. How often do you update information? Is there a need to do it more/less frequently? From a time standpoint, could you do it more frequently? From an availability of new information standpoint, could you do it more frequently?

17. Do you use a computer now? If so, what kind of system is it? Who enters the data? How easy is it to use? How reliable is it? Do you feel confident that the information entered has been received and transmitted properly?