



Maryland 2-1-1

Benefits and Costs of a 2-1-1 System for Maryland

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Submitted to:
2-1-1 Maryland Task Force

by

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I. EXECUTIVE SUMMARY

Background

In July 2000, the Federal Communications Commission (FCC) designated the three-digit code, 2-1-1, “to be used to provide access to community information and referral services.” In so doing, the FCC stated that it would “expect community service organizations to work cooperatively to ensure the greatest public use of this scarce resource.”

The 2-1-1 Maryland Task Force was organized in August 2000 with the charge to design a plan to enable Maryland to take full advantage of 2-1-1. In August 2001, the Task Force commissioned a study of the benefits expected to accrue to Maryland in using 2-1-1 and the costs of implementing a 2-1-1 system. PSComm, LLC was selected to conduct this analysis, the results of which will become part of Business Plan being developed by the Task Force.

Concurrent with the development of the Business Plan, the Task Force plans to continue its outreach to stakeholders in a Maryland 2-1-1 system, including existing information and referral (I&R) providers, nonprofit health and human service providers, the Governor, Lt. Governor, various State agencies, and the General Assembly as they plan for the upcoming 2002 legislative session.

Conclusion

As established in this report, while Maryland has a fairly extensive “network” to access health and human services throughout the State, what is missing is a uniform approach for efficiently bringing together those in need with those willing to lend a helping hand. As demonstrated in other states and localities across the country, this gap can and should be filled by establishing a statewide 2-1-1 system.

Implementation of a comprehensive 2-1-1 system for community I&R services will foster more efficient use of available community resources, by providing an easily used and easily remembered point of access for all citizens. Understanding that this is not a cure-all for health and human service needs in the state, and that a successful 2-1-1 must be backed by a strong delivery system, 2-1-1 also will act as an invaluable tool to those who plan and fund this system.

Imagine—a citizen anywhere in Maryland—will be able to obtain health and human service information through an easy-to-us, easy-to-remember, free, 24-hour service with multiple access points—through the 2-1-1 telephone code, the Internet, in-person, or by mail (regular or electronic). By connecting health and human services and providing information, the compartmentalized, difficult to navigate maze of services will be rebuilt following a blueprint that places service to Marylanders as the ultimate priority.

Clearly, a comprehensive statewide 2-1-1 system will improve the everyday quality of life for all Marylanders by promptly connecting them to the health and human services they need. A 2-1-1 system can also provide important statistical information about

the kinds of problems that people have, the extent of their occurrence, plus valuable information about the ability of the community to meet these needs. While such a system is essential to meet the daily needs of Marylanders, it can also serve as a vital part of the State's emergency response system. For example, Infoline 2-1-1 in Connecticut proved invaluable in the wake of the September 11 terrorist attacks assisting in the coordination of a variety of health and human service I&R needs—providing mental health assistance, directing individuals to the nearest bloodbanks, locating missing relatives, and more.

Benefits from Introducing 2-1-1 to Maryland

The studies undertaken by PSComm demonstrate that statewide implementation of 2-1-1 would benefit all Marylanders, including individual citizens, employers, health and human service providers, and planners and funders. The analysis focused on both the benefits that could be expected but not precisely measured as well as those benefits that can be estimated in dollar terms. Further, the study made clear that many of the benefits help more than one constituency.

Examples of these tangible and intangible benefits for each of the major groups include:

- **Individuals**—Reductions in time and frustration and avoidance of delay in seeking services among hundreds of provider organizations.
- **Employers**—Gains in employee productivity and retention and ease in donating money, time or material goods.
- **Health and Human Service Providers**—Avoidance of calls from persons randomly calling for services, reduction in time registering and interviewing clients who have applied at an inappropriate organization, reduction in calls for health and human services to public safety agencies, and reduction in time and effort devoted to maintaining multiple resource files.
- **Planners and Funders**—Gains in ease and accuracy of measuring community needs and gaps in services, gains in achieving a seamless statewide health and human service delivery system, and reduction in need for specialized “800” number information lines.

Cost of Introducing 2-1-1 to Maryland

PSComm, based on Task Force recommendations, calculated the costs of implementing and maintaining a 2-1-1 I&R system in Maryland comprised of three to six regional call answering centers with at least one serving as a single after hours calling center. Presented below are the two cost summaries, start-up and recurring, for the recommended three to six regional call center configuration.

Table 1.1 **Estimated Start-Up Costs**

Facilities	\$266,250
Technical Infrastructure	\$151,900
Database Application	\$110,000
Telephone Expenses	\$181,419
Total Estimated Start-Up Costs	\$709,569

Table 1.2 **Estimated Annual Operating Costs**

Facilities	\$76,950
Technical Infrastructure	\$10,000
Database Application	\$90,000
Telephone Expenses	\$203,725 (incl. \$100,000 Long Distance)
Personnel	\$4,891,624 + Recruiting/Selection Costs
Administrative Costs	\$1,017,615
Marketing/Public Education	\$1,275,000
Total Estimated Recurring Costs	\$7,564,914

To place the costs in perspective, comparisons were made with two other models —a single statewide call-answering center providing 24-hour service and 24 jurisdictional call centers (23 counties and Baltimore City). This analysis found that a single call center would be the least expensive operational model while the 24 jurisdictional model would by far be the most expensive.

While in most cases the database, telephone, and marketing/public education expenses would not change significantly with a 24 call center model, expenses such as facilities, technical infrastructure, and personnel would dramatically increase. Personnel, already the largest annual operating expense, would be cost prohibitive to accommodate minimal call center staffing requirements¹ for each jurisdiction. For example, based on inquiry volume, this analysis recommends a maximum of 20 call taking positions, in addition to supervisory and administrative staffing, at peak hours for the 3-6 regional call center model. The use of a 24 call center model would require many more positions (at least 24-one each). Further, it is important to recognize that larger jurisdictions will require multiple positions, while smaller jurisdictions may not be able to support the operation of a single position.

¹ Administrative, supervisory, inquiry receipt and database support staff.

II. INTRODUCTION AND BACKGROUND

On July 21, 2000 the Federal Communications Commission (FCC) issued an order assigning one of the rare N-1-1 three-digit telephone access codes, 2-1-1, “to be used to provide access to community information and referral services”. The Commission’s order stated that it would “expect community service organizations to work cooperatively to ensure the greatest public use of this scarce resource”. The Canadian Radio-Television and Telecommunications Commission, on August 9, 2001, issued an order dedicating the 2-1-1 code to use for providing information and referrals to community, social, health and government services.

In response to the action of the FCC, the United Way of Central Maryland (UWCM) offered to serve as the base for 2-1-1 planning in Maryland and the 2-1-1 Maryland Task Force was created in August 2000. The Task Force, which has a membership of about 80 persons, is a public/private collaboration that includes persons from four major groups:

- Nonprofit and governmental health and human service providers at the state and local level
- I&R providers in Maryland
- Local and state government leaders
- Local United Ways throughout the state

The Task Force worked through several committees. These committees produced Working Papers containing recommendations that address the structure for the proposed 2-1-1 Maryland system, the principles that should guide provision of service by a Maryland system, guidelines for developing a single statewide database for the Maryland system, and how the system should be governed. The Task Force also commissioned this study of the benefits and costs that would be involved in introducing 2-1-1 to Maryland.

The Access Problem

When discussing the “access problem” in linking those in need of health and human services with appropriate community-based providers of social, medical, health and human services, some assume that the subject is limited to the uninsured and/or the underinsured. To the contrary, while the lack of insurance is a fundamental problem in health and human services today, it is neither the sole nor dominating barrier to receiving proper health, medical, human or social services either nationwide or within Maryland.

According to the Economic and Social Research Institute’s (ESRI) report, **Increasing Access: Building Working Solutions**, “A host of linguistic, cultural, racial, geographic, and organizational factors present impediments that jeopardize the health of large segments of our population.” All too often, people become confused or discouraged by the complexities of the system, and give up before they ever find out about programs and services that could assist them in solving their issues or problems. Because individuals do not receive proper direction and assistance,

emerging situations often become more problematic and costly to address, many times at the public's expense. Throughout the United States and the State of Maryland, I&Rs are assisting individuals, families, community activists, religious organizations, employers, educational institutions, corporations, and other health and human service providers in seeking to overcome a variety of systemic barriers to gain timely access to appropriate programs and services. Still, the 2-1-1 Maryland Task Force was established with a recognition that the I&R providers can improve their abilities to meet needs, and collect the data necessary to document their collective contribution in meeting and matching those outstanding needs with timely, appropriate services.

In that vein, this analysis seeks to identify and articulate the variable components required to design and implement a statewide comprehensive 2-1-1 system in Maryland. The goal is to achieve dramatic, wide-scale improvement in public access to social, health and human service programs and services for all Marylanders, and ultimately to improve the quality of life in the State. This report defines, describes, and calculates the anticipated quantifiable and non-quantifiable benefits of implementing a 2-1-1 system as well as the costs of the system.

Data and information for this report were gleaned from:

- The Working Papers prepared by the 2-1-1 Maryland Task Force;
- A survey of existing I&R services in Maryland;
- Interviews and consultations with I&R experts, health and human service professionals, government officials, and other national and Maryland stakeholders in 2-1-1;
- Examination of reports, studies, marketing information, and usage data obtained from jurisdictions currently operating 2-1-1 systems or coordinated I&R services throughout the United States and Canada;
- A comprehensive search of I&R and 2-1-1 legislative and regulatory information;
- Reviews of relevant governmental reports;
- Evaluation of materials from selected national organizations, I&R listservs, web-based internet news searches and research literature; and,
- Cost-benefit analyses of various I&R configurations, which might be adopted to meet the needs of Maryland's proposed 2-1-1 system.

Origins of I&R and 2-1-1

The health and human services system in the United States is both large and complex, consisting of major sub-sectors in the nonprofit, governmental and for-profit sectors. According to the Healthcare Financing Administration (HCFA), healthcare alone is estimated to be a \$1.3 trillion industry in 2000, comprising over 14 percent of the Gross Domestic Product (GDP). When considering the professional workforce and the ancillary jobs within the industry the National Institute of Standards and Technology estimates that one in every 11 U.S. residents works in the healthcare business. Individuals, families, employers, and even healthcare workers often find it difficult to navigate the complex and ever growing maze of human services agencies and programs and often spend inordinate amounts of time in trying to identify the agency or program that provides a service that may be immediately or urgently required.

I&Rs developed in response to these needs. They are the link between people in need of health and human services assistance and the appropriate providers of such services and answer more than 50 million calls annually across the United States. I&R specialists assess callers' needs and determine the service providers best equipped to handle their problems. I&R providers maintain comprehensive databases of community resources.

I&Rs have seen tremendous growth over the years as the health and human services industry became increasingly complex. Notwithstanding their growth and successes, industry leaders and others have recognized the limitations of the current I&R system. In acknowledgment of the need for a more uniform approach, many in the industry have identified 2-1-1 as the vehicle. 2-1-1 takes the efforts of I&Rs a step further, connecting them into a seamless system for accessing information on health and human services. 2-1-1 is a free, easy-to-remember, easy-to-use, and universally recognizable number. Simply dialing 2-1-1, or accessing its database through the Internet, will make it possible for people in need to navigate the complex and ever-growing maze of health and human services' agencies and programs.

Current System Overview

Each day, tens of thousands of Marylanders face the daunting task of seeking out information and access to a wide variety of critical health and human services. Their specific need may be for day care services for their children or an elderly relative; substance abuse treatment for a teenager or pregnant mother; a mentoring program for a child; food, clothing and shelter in response to job loss; medical care for an uninsured or underinsured individual; assistance in locating the nearest blood bank; or shelter and protection to victims of domestic violence. There are literally hundreds of other situations and specific scenarios where citizens, visitors and immigrants in the State might require ready access to I&R resources.

A 1997 national I&R call summary prepared by United Way 2-1-1 documents the variety of services sought by those calling I&Rs throughout the country.² Specifically, an estimated seven percent of the calls received involved immediate shelter needs, 20 percent involved rental/mortgage assistance needs (e.g., threat of eviction), 16 percent involved utility issues (including those critical situations brought on by inclement weather), and nine percent involved food services. The remaining calls within the summary, slightly less than half of all calls placed, presented issues of counseling, medical aid, prescription assistance, physical and sexual abuse, and potential suicide. Likewise, an analysis of calls received by the UWCM's I&R service, First Call for Help (FCFH), from January 1, 2001 to October 4, 2001 shows the following breakdown of calls: 32 percent for employment and financial, 32 percent for food, clothing, and housing, five percent for health and homecare, seven percent for counseling and protective services, and the remaining 24 percent for general agency information, disaster services, transportation and other issues.³

² As referenced in the May 1998 FCC petition by the 2-1-1 Collaborative.

³ United Way of Central Maryland's First Call For Help I&R is Maryland's only comprehensive statewide I&R and receives approximately 10% of the statewide I&R call volume according to recent survey data.

The current I&R system infrastructure in Maryland is largely uncoordinated and does not fully meet the needs of the State's diverse population. Many I&Rs only provide information and referral services for limited, specific target populations (e.g., the elderly, persons with disabilities, etc.) or confine their services to certain geographical areas (e.g., city, county, or regional service areas). The UWCM's FCFH offers its services statewide and, in the course of a year, handles inquiries from every county in the State. However, most of its calls come from persons living in the Baltimore metropolitan area, where the service is physically located. Persons residing in counties farther away from Baltimore have toll-free access to FCFH, but may not know that it exists or may not believe that it is equipped to help persons throughout the State. In this situation, individuals may have to make several calls to a multitude of different agencies before they secure the services they seek for a wide variety of health and human service related needs. Additionally, many of these organizations and agencies providing services within the state actively maintain their own stand-alone information databases.

In sum, individuals requiring and seeking assistance may find Maryland's current system difficult for a variety of reasons:

- Because most Maryland I&Rs do not offer 24-hour assistance available 7 days a week, callers may be limited to calling only during certain hours;
- Callers may be required to place toll calls because some I&Rs currently do not offer toll-free access;
- Persons in need may be forced to call multiple I&R services in order to locate appropriate, available resources; and,
- Because some I&R services do not have interpreters for non-English speaking callers or may not be equipped to respond to persons with physical handicaps, callers with special needs or disabilities may find it more difficult to locate and access appropriate services.

National 2-1-1 Efforts

Examining the experiences of states and municipalities that have adopted 2-1-1 systems and other coordinated I&R services is useful as Maryland considers the possibility of creating its own statewide 2-1-1 system. Prior to the FCC assignment, only one state, Connecticut, and two greater metropolitan areas (Atlanta and Columbus, Georgia) had fully-implemented 2-1-1 systems offering three-digit dialing with toll-free access to comprehensive community services.

Since the assignment of 2-1-1 by the FCC, 2-1-1 services have been initiated in some communities in Florida, North Carolina, New Mexico, Louisiana, Alabama, Tennessee, South Dakota, and South Carolina. Development of 2-1-1 on a state, county or local level is currently under consideration in most of the 40 states where no 2-1-1 service has yet been launched. Further, 2-1-1 and the idea of a centralized statewide I&R service have received considerable attention in recent weeks as a key component within state and local emergency preparedness planning. In addition to the ongoing benefits 2-1-1 can bring citizens seeking health and human services, a coordinated I&R system can play a critical part in state and local emergency response.

Connecticut's Infoline 2-1-1 played a key role in the state's response to the September 11 tragedy in New York City. The success of 2-1-1 on September 11 was augmented by the fact that 2-1-1 Infoline already had a working relationship with the State's Office of Emergency Management from its previous Y2K planning. In addition to its role as the state's information/referral/crisis service 24/7, Infoline was asked to manage a special line (1-866-CT-HELPS) set up by the Governor to help Connecticut victims and families of victims. 2-1-1 experienced an overall increase in calls during this period with calls involving families looking for victims; children frightened and parents concerned; individuals reliving other disasters; people who got out of the World Trade Center and felt guilty; information on terrorist suspects; people wanting to help (donate blood, money, goods, etc); mentally ill persons feeling overwhelmed with disaster; location of vigils; requests for support groups; and more. Infoline 2-1-1 also provided call-taking services for the Red Cross, whose telephone system was overwhelmed by the number of calls received in the wake of the September 11 attacks.

As 2-1-1 initiatives develop across the country, two models have become predominant. These models have developed based on a number of similar variable factors, including, but not limited to: (1) the level of cooperation among providers; (2) the level of state/local government and agency participation; (3) the customer base/defined client populations in need: and (4) the availability of public and private funding resources. While these typologies can vary greatly depending on organizational management, answering points, and call processing, as the chart illustrates they also can be identical in every factor except the model typology itself. The Maryland Task Force has recommended using the second model shown below.

Table 2.1 **National 2-1-1 Models**

Model Typology	Organizational/ Management Structure	Answering Points	Call Processing
1. Statewide 2-1-1 Service – Single Agency as Service Provider	<ul style="list-style-type: none"> • Non-profit • Governmental 	<ul style="list-style-type: none"> • Single – 24/7 • Multiple Regional 24/7 	<ul style="list-style-type: none"> • I & R Only • I & R & Service Provider
2. Statewide 2-1-1 Service – Multiple Agency Service Providers	<ul style="list-style-type: none"> • Non-profit/ Governmental • Outsourced 	<ul style="list-style-type: none"> • Multiple with After Hours Overflow 	<ul style="list-style-type: none"> • Outsourcer

Telephony Issues

The explosive growth in wireless telephone usage challenges the ability of any N-1-1 system to maximize both its availability to persons in need and its effectiveness in meeting those needs in a timely manner. The translation of a wireless call to 2-1-1 requires phone providers to alter their systems to allow for the recognition of 2-1-1 calls originating from wireless mobile phones. As stated in the FCC petition, “the

benefits of 2-1-1 are not limited to landline uses...As the United States becomes increasingly dependent on wireless communications, it becomes inconsistent and undesirable from a consumer standpoint that consumers cannot reach the same services with landline and wireless phones.”

According to a new study by the Carmel Group, mobile phone subscribers will outnumber fixed line accounts by 2006 with 1.66 billion mobile subscribers and 920 million fixed worldwide. In the United States, the Government Accounting Office (GAO) reports that the number of wireless subscribers has increased at an extraordinary rate from 16 million in 1994 to an estimated 110 million in 2001. The Maryland Emergency Number Systems Board Wireless Impact Revenue Study in February 2001 found that there are an estimated 16 million wireless subscribers within the State, based on subscriber billings. This issue may require guidance and direction from the Maryland Public Service Commission (PSC) to firmly secure its implementation.

Similarly, pay phones will continue to provide telephone access to many of those in need of health and human services. As of December 31, 2000, the PSC reports that there are 20,749 pay phones within Maryland, and more than 40 different pay phone providers. The PSC also has jurisdiction concerning providers allowing callers to access 2-1-1 services.

Maryland Efforts

While this report was being prepared, the State of Maryland began evaluating the need for a statewide information and referral system as part of its critical infrastructure planning in response to the events of September 11. Federal funds are becoming available to assist states and localities in disaster relief, emergency preparedness, and bioterrorism response--\$5.1 billion— and many jurisdictions now will have the means to implement such systems. Leading national public health and emergency management officials are also evaluating the utility of statewide and regional 2-1-1 systems in developing more comprehensive, timely public health surveillance infrastructures. Some of these efforts include:

- **State of Maryland Critical Infrastructure Planning:** The State identified the need for development of a statewide healthcare and social service referral system in creating its new critical infrastructure plan in response to the events of September 11. As currently described, this system would allow government and non-government personnel to obtain referrals to public, nonprofit and private health and human service programs by either calling a single phone number or using the Internet. This capability will make it easier for people in need to obtain appropriate care. It would also divert non-emergency traffic from 9-1-1 systems.
- **The Maryland Partnership for Children, Youth and Families MIS Workgroup:** This group is in the final planning stages for implementation of a “Referral Resource Guide” designed to: (1) secure client access to the most appropriate services; (2) match clients with services more quickly; and (3)

provide significant time-savings in acquiring relevant information for client referrals. This guide is envisioned as a statewide Internet-based application to assist caseworkers in making referrals—a significant aspect of their missions.

- **The Department of Human Resources** is currently in the process of designing the “Chessie” system, which is a federally funded project to establish a statewide case management tracking and information referral resource system to assist staff members implementing and overseeing the state’s child welfare program.
- **The State of Maryland Drug Treatment Task Force**⁴ has recently implemented: 1) A cabinet-level position to coordinate drug and alcohol treatment and prevention services across agencies; and, 2) A **HealthChoice Substance Abuse Improvement Initiative** to ensure easier access for those eligible for Medicaid to seek treatment services.⁵
- **The Maryland Department of Public Safety and Correctional Services** (DPSCS) Division of Parole and Probation (DPP) has implemented a drug treatment tracking system, HATTS⁶, with the assistance of the Washington/Baltimore High Intensity Drug Trafficking Area (HIDTA).
- **The University of Maryland Bureau of Governmental Research** and the **Maryland Alcohol and Drug Abuse Administration (ADAA)** have established and implemented an Automated Case Management Initiative utilizing the HATTS system.
- **The Maryland Department of Health and Mental Hygiene/Mental Hygiene Administration** is currently undertaking a comprehensive statewide terrorism related mental health needs assessment. Input from CORE Service Agency directors as well as numerous other mental health service constituents has been considered.

⁴In 1998, the Maryland General Assembly passed legislation, HB149, establishing the **Task Force to Study Increasing the Availability of Substance Abuse Programs**. The objective of the task force was to develop a comprehensive strategy for increasing the funding and the availability of substance abuse programs in the State. An Interim Report in December, 1999 was followed by a Final Report in February 2001, and the establishment of a statewide council in August 2001.

⁵ Drug Treatment Task Force Final Report, February 2001. In its findings the Task Force cited “the volume of drug and alcohol treatment services delivered decreased after the implementation of HealthChoice Medicaid program—a 70% drop in the units of service between FY96 and FY99. In response to this problem the Department of Health and Mental Hygiene (DHMH) recently established a self-referral system for HealthChoice enrollees.

⁶ HIDTA Automatic Treatment and Tracking System (HATTS)

III. BENEFITS

Purpose

The purpose of this section is to define, describe, and calculate the benefits of implementing and maintaining a coordinated statewide 2-1-1 I&R system within the State of Maryland. Due to the vast combinations of effected constituencies and their corresponding benefits, a selected sampling was considered for this analysis.

It is important to recognize that I&R services provide variable benefits that cannot always be reduced to a concise financial or quantitative value, and any such effort relies on analysis of data, which the current fragmented system does not easily nor practically facilitate. As seen by jurisdictions with 2-1-1 already in place and with Maryland I&R call data, the need for community resources reaches all persons in a community, not only those traditionally viewed as at-risk populations. While national Welfare to Work initiatives and the current economic downturn play a part in numerous requests for services, the typical caller to the 2-1-1 system in Atlanta is employed and in Connecticut the most common request is for information about childcare. Also in Connecticut, 15% of calls are from public and private service providers seeking services for clients.

A 2-1-1 system in Maryland can be expected to provide important tangible and intangible benefits. Benefits will be seen by the following groups:

- **Individual Residents** as they more effectively find their way through the health and human service system;
- **Employers** who will experience a healthier and more productive workforce, experience an enhancement to their Employer Assistance Programs (EAP), and will be able to direct their charitable contributions and services more easily;
- **Providers of Health and Human Services** who will be able to stretch limited health and human service dollars to offer more appropriate services to more clients; and
- **Legislators and others who plan for and pay for health and human services** as they gain better insight and access to the entire health and human services delivery system and the needs of both overall client populations and specific targeted subcategories of need within the State. An integrated statewide system will be able to glean more comprehensive data and information to define and analyze the scope and breadth of service requests and the timely and appropriate responsiveness and long-term outcomes of services provided. Armed with such information, more informed strategies and potential solutions can be devised to meet the needs for health and human services throughout the delivery system.

Benefits For Individual Citizens

Accessing services frequently is challenging. Indeed, the health and human service system, with its many programs and services, presents a complex maze of requirements and programs to individuals seeking services.

Many health and human service organizations have names that are not immediately descriptive or all encompassing of the full complement of services they provide. Phone books list agencies by name but provide minimal, if any, description of services. Directory assistance operators may provide some assistance but are not trained to assess caller needs or handle crisis calls. The Internet offers unprecedented information but may not have information about local resources.

Specifically, within Maryland there are literally thousands of phone numbers for social service programs, government offices, community organizations, volunteer referral centers, donation clearinghouses, educational systems, and neighborhood groups. The way in which many residents initially access the services represented by this vast array of resources is through their local I&R service—138 I&Rs in Maryland last year handled more than 950,000 calls. These 138 comprehensive and specialized I&Rs in Maryland each have their own name and ten digit phone number. Most people walking down Main Street of any town or city in Maryland will not be able to correctly state the name and phone number of a local I&R service. Thus, very often people do not have access to the information or service they need, because they do not know who to call.

The three-digit 2-1-1 dialing code, rather than a ten-digit or toll-free number, has emerged as an important innovation to providing I&R services. It eliminates confusion and the margin for error for misdialed numbers. It is efficient, giving people one number to call when searching for assistance. It is easy to remember, particularly in a non-emergency crisis situation. It offers consistency throughout a state or region, which may be particularly helpful to an increasingly mobile population, or for assisting relatives or loved ones who live in a distant community. It offers an easy alternative for non-emergency 9-1-1 (a potentially important factor given that some communities report that from 50-90% of calls to their 9-1-1 systems are inappropriate calls, including calls that could be handled by a 2-1-1 system). Current operational 2-1-1 systems also offer 24-hour accessibility to trained staff. Perhaps the most convincing information about the usability of 2-1-1 systems is that they are used by callers. Atlanta experienced a 33% increase in calls in the first nine months of moving to a three digit (from an 11-digit number), and Connecticut's call volume increased approximately 40% during the first year of moving to the three-digit calling code.

Below are general statistics documenting the difficulty of connecting community health and human services to targeted populations--individuals suffering from social, economic, physical and/or mental ailments, for example:

- Only one in four affected adults and one in five children and adolescents in need of mental health services gets care.⁷
- Individuals living in rural and isolated areas face special challenges in receiving timely, quality health care.⁸
- More than 20 million rural residents in America have inadequate access to health and human services.⁹
- During the past year, requests for emergency shelter increased in a 30-city survey by an average of 11 percent, with 72 percent of the cities registering an increase. Requests for shelter by homeless families alone increased by 15 percent, with 64 percent of the cities reporting an increase.¹⁰
- In a 30-city survey released by the National Conference of State Legislatures, requests for emergency food assistance increased by an average of 14 percent, similarly, requests for food assistance by families with children also increased by 14 percent. Food requests by the elderly increased by an average of six percent.¹¹
- Some Marylanders are experiencing declining health, indicating an increased need for intervention. Areas which need increased attention include care for infants and children and for adults with heart disease, influenza, and pneumonia vaccinations.¹²

With good intentions, an incredibly complex system of health and human services has been developed in the United States. This system includes a wide variety of programs organized and funded by a complicated mix of government departments (federal, state, and county) along with private non-profit agencies and for-profit organizations at the national, state, and local level. Separate funding streams often require separate eligibility restrictions, making it difficult to find the appropriate services for a given individual. Even those who work as providers in the system have difficulty understanding what services are available and how to access services outside of their narrow area of specialty. For individual citizens, it can be and is often overwhelming. Nearly every citizen has faced, with more or less exasperation, the question, Where do I start? After an initial entry point into the system is identified, the frustrations often do not end. Individuals are frequently shuffled from agency to agency, first by phone and then in person, before they find the services they need. A 2-1-1 system will provide a rational entry point into the system along with a trained and caring helper. Individuals can expect many measurable and intangible benefits from such a system.

⁷ Mental Health statistics can be found in a fact sheet on mental health released on February 13, 2001 by the US Department of Health and Human Services.

⁸ Health Care in Rural Areas can be found in a July 25, 2001 study released by the Department Health and Human Services.

⁹ Ibid.

¹⁰ Homelessness statistics can be found in a fact sheet on homelessness released on August 6, 2001 by the US Department of Health and Human Services.

¹¹ Hunger statistics can be found in a report released in July 1999 by the National Conference of State Legislatures.

¹² Statistical information on health in the State of Maryland can be found in a Maryland's Health Improvement Plan 2000-2010 released by the Maryland Department of Health and Mental Hygiene.

Reducing Citizen Frustration

An especially important benefit is the reduction in the level of frustration felt by individuals trying to use the health and human service system. It is impossible to put a dollar value on eliminating this frustration. More than just a nuisance, this frustration can itself lead to a greater need for public services as those who have been caught in the system without finding an appropriate service can testify. Frustration with our health and human service system also erodes confidence in government and reduces public support for needed services and for the system as a whole. The proposed 2-1-1 system will be easy-to-use, easy-to-remember, free, 24-hour service, with multi-access points—telephone, Internet, fax, in-person, and mail, which will alleviate many of these barrier issues.

Time Saved in Locating Services

The existence of a statewide 2-1-1 system will save individuals time when they try to gain access to health and human services. Less effort will be needed to acquire the desired information and less effort will be spent pursuing avenues that turn into dead ends. As an example of this type of savings, a single mother who has been working the day shift for her employer may be asked to work evenings. The day care provider for her child may be open only until six in the evening and family members may not be available to care for the child. This individual might spend a significant amount of time trying to find providers. Calling the Maryland 2-1-1 system for a more direct answer to her dilemma would save her time. Because both the time individuals save accessing health and human services, and the value of this time, can be estimated, an estimate of this benefit can be made in dollar terms. This calculation uses the assumption set from the Nebraska report, which is both reasonable and conservative. It is estimated that 25% of all 2-1-1 calls will result in an individual saving in time. It is assumed that a caller will save 40 minutes of time and drive 5 fewer miles to access the needed services. These calculations result in a total time locating services savings of \$1,081,272, and are outlined below:

$$\begin{aligned} \text{Time Savings: } & \$12.06^{13} \times 79,447^{14} = \$958,130 \\ \text{Mileage Savings: } & \$0.31^{15} \times 5 \times 79,447 = \$123,142 \end{aligned}$$

Reducing The Ultimate Cost of Services and Avoiding Expensive Alternatives

Besides being frustrating and time consuming, delays in finding an appropriate service are costly for the individual. It is widely recognized that early appropriate intervention is more cost-effective than delayed services for most problems. One well-known example of this problem can be found in the large increase in hospital emergency department (ED) visits and the subsequent costs associated with emergency care.

According to a Government Accounting Office (GAO) study, over 40 percent of patients treated in the ED lacked a usual source of care. The study concludes that patients

¹³ Based on \$18.10 mean hourly wage in Maryland, Maryland Department of Labor

¹⁴ Based on a projected first year call volume of 317,787—discussed in Cost Section.

¹⁵ Based on State vehicle reimbursement rate.

with access to primary care providers and appropriate specialists for good preventive care and disease management are less likely to make an ED visit or multiple visits. While an exact Maryland figure could not be found demonstrating the large number of ED visits that could be avoided by matching appropriate services, or accessing services earlier, it can be assumed that this figure is significant. According to the American Hospital Association (AHA), the number of ED visits nationwide has increased by 15 percent since 1990. By 1998, one out of every five people had at least one emergency department visit—an estimated 40 percent of all hospital admissions. To put a general cost figure in perspective, the AHA national average cost for an urgent ED visit in 1998 was \$351.

Drug Treatment is another area in which matching appropriate services and avoiding expensive alternatives can realize great cost savings. In 1994 a national study found that for every dollar invested in addiction treatment services seven dollars were saved in treatment costs. In Maryland, the Center for Substance Abuse Research (CESAR), in 1995, estimated the average cost for not treating an alcohol and/or drug abuser in Maryland equated to \$19,500 per drug user/addict. CESAR estimated that substance abuse costs the State of Maryland approximately \$5.5 billion dollars each year. CESAR estimates illustrate the impact and potential savings that could be achieved by enhancing the availability of and access to substance abuse treatment.

Benefits For Employers

Employers also will realize benefits from a 2-1-1 system, some of which can be estimated in dollar terms. When employees gain access to appropriate services more quickly, they should realize improved workplace productivity and reduced absenteeism. More appropriate referrals should result in a quicker resolution of problems and quicker return to work. The I&R network can also be used by employers to refer employees for certain job-related services such as education, training, and tax assistance. Child and elder care assistance and English language classes are other services more readily accessible through the I&R network that also may benefit employers by enhancing productivity and retention.

Using the assumption set from the Nebraska model, a conservative estimate was calculated to demonstrate cost benefits to Maryland employers. According to their assumptions, roughly five percent of I&R calls are from the workplace and the caller spends about 10 minutes on the telephone. The lost productivity time is valued at the mean hourly wage for the State of Maryland. Calculations are below:

$$\text{Lost Productivity: } \$3.01^{16} \times 15,889^{17} = \$47,825$$

Similarly, the widespread adoption of employee assistance programs (EAP)¹⁸ across the United States recognizes the need for such assistance. A 2-1-1 system will lessen the I&R burden on EAPs and augment their work in providing services.

¹⁶ Based on \$18.10 mean hourly wage in Maryland (10 minutes/ 60 minutes x \$18.10= \$3.01 wage per 10 minutes).

¹⁷ Based on a projected first year call volume of 317,787. (317,787 x 5% = 15,889)

¹⁸ As defined by the Employee Assistance Professionals Association, an EAP is a worksite-based program designed to assist in the identification and resolution of productivity problems associated with employees impaired by personal concerns, including,

Further, businesses and their employees who want to donate their money, time or material goods for civic purposes can do so more easily with 2-1-1.

Benefits For Providers of Health and Human Services

Professionals in the health and human services field have commented on the difficulty of navigating the maze of resources and ever-changing programs that are available. Local agencies may not know of state programs, and state agencies may have inadequate information to refer to local programs.

A 2-1-1 system will benefit individuals and organizations that provide health and human services in many different ways. Some of these benefits lend themselves to estimation in quantitative terms and are included in the summary below.

Avoiding Inappropriate Calls

Under our current system, health and human service providers get many calls for services which would more appropriately be directed to another provider. These calls cost the agency time and money and reduce the agency's ability to provide more appropriate services. A 2-1-1 system will help callers more accurately determine which agency to contact for their specific need.

In other instances, inappropriate calls to non-health and human services agencies often require agency personnel to take time (and therefore resources) to help an individual by giving information that is outside of the agency's service area. A primary example of a sector that often deals with health and human service requests is public safety. Persons residing in areas not possessing a 24/7 2-1-1 system or other easily recognized, easy to remember non-emergency services telephone numbers often have no choice but to call 9-1-1 for assistance. These types of calls not only take the time of the emergency call taker to process, but the time of the police officer to respond to assist the caller and attempt to resolve the problem. The availability of 2-1-1 services, statewide, on a 24-hour basis will allow persons who would otherwise call 9-1-1 to use 2-1-1 to meet their needs.

Baltimore City presently has a 3-1-1 police non-emergency telephone number. Since inception, it has consistently reduced the calls received over 9-1-1 lines by 33%. This assisted Baltimore in reducing its average 9-1-1 answer time from six seconds to less than three. It also has reduced the amount of time an average caller remains in a queue awaiting service.

While anecdotal evidence exists, the overall benefits that a 2-1-1 number will have on 9-1-1 systems are difficult to quantify because of the lack of statistical data on types of calls referred by 9-1-1 centers. However, for the purposes of this study, a sampling of police call center data from Baltimore City and Montgomery County was obtained. This data suggests that 2-1-1 will positively affect 9-1-1 and reduce on-duty officer

but not limited to, health, marital, family, financial, alcohol, drug, legal, emotional, stress, or other personal concerns which may adversely affect employee job performance.

time which is often spent assisting the community in locating health and human services.

The quantifiable health and human service related calls to Baltimore City Police Department (9-1-1 call center data) during January 1 through September 30, 2001 totaled 16,132.¹⁹ The quantifiable health and human service related calls to Montgomery County Police Department (9-1-1 and administrative call center data) during January 1 through September 30, 2001 totaled 8,281.²⁰

Using conservative averages of officer time spent responding to such calls at 45 minutes and a conservative average officer salary of \$25 an hour including benefits, a projected savings in officer time in these two jurisdictions alone would be **\$401,493** for a nine month period.

Annual officer time savings: $\$18.75^{21} \times 21,413^{22} \times 12/9^{23} = \$535,325$

Montgomery County police officials, when interviewed by 2-1-1 Maryland Task Force members, responded positively to the 2-1-1 concept to assist in departmental issues such as off-loading 9-1-1 and assisting on-duty officers. Anecdotal evidence also concludes that smaller jurisdictions may experience more significant reductions in 9-1-1 call volume, as 9-1-1 may be seen as a “catch-all” number in these areas of the State.

Further, in the wake of the recent terrorist attacks, both the 9-1-1 and officer time issues are even more noteworthy. The intense burden the terrorist attacks are placing on police departments around the country has been the focus of Congressional hearings, the recent meeting of the US Conference of Mayors, and major news stories. Police departments are juggling urgent new demands with their officers responding to hundreds of reports of spilled powder, bolstering security in public places and even leaving their departments to serve in the military reserves. Federal, state, and local governments are re-working business processes and stretching budget dollars to ensure that long-term strategies are not being sacrificed to fulfill short-term needs. Baltimore City alone has had unanticipated costs of \$2.6 million since September 11, much of it for police, and city officials expect to spend \$9 million by June 30, the end of the fiscal year.

¹⁹ Call Breakdown as follows: 1,851 Suicide Attempt, 712 Rape, 1,331 Sex Offense, 1,920 Intoxicated Person, 2,386 Person Lying on Street, 2,836 Child Abuse (physical), 698 Child Abuse (sexual), 2,159 Mental Case, 982 Exparte Order, 1,257 Child Abuse (neglect).

²⁰ 5,011 Check Welfare (check well-being of persons property – general complaint), 52 Emergency Shelter (persons seeking lodging assistance), 1,463 One Down (usually, unconscious person on street), 1,755 Intoxicated calls

²¹ Based on \$25/hour average officer salary and benefits for the 45 minutes spent on the call ($\$25 \times .75 = \18.75).

²² Based on the total health and human service quantifiable calls from Baltimore City and Montgomery County (16,132 + 8,281 = 21,413).

²³ To estimate a 12 month savings.

Reducing Inappropriate Evaluations

Whenever a person calls or comes to an agency, staff time must be spent evaluating the person's needs and determining the appropriate services. When this time is spent on behalf of an individual who is inappropriate for the service, it takes away from the agency's ability to serve appropriate clients. A 2-1-1 system can direct individuals to more appropriate services, allowing the agency to serve additional individuals with the same expenditure of staff time and dollars.

Reducing Redundant Information and Referral Costs

The largest savings to the health and human service providers comes from reducing duplication in the I&R functions. As this report shows, many health and human service agencies in Maryland provide overlapping I&R services. This problem is not new. As long ago as 1978 (GAO Report to Congress) the office of the U.S. Comptroller General studied the I&R system across the country and identified several areas of potential duplication when many different agencies offer I&R on an uncoordinated basis. According to this GAO report, the most costly of these is in the time and effort required to keep duplicate resource files complete and up to date. The GAO report concluded that this inefficiency affected both the I&R providers and the services they were trying to catalogue. For example, in Seattle, 24 different agencies maintained independent resource files and updated them at least annually. This means that each agency was called at least 24 times a year for up-to-date information. An official at one agency complained that they were surveyed to death as a result of these efforts. In addition, I&R agencies duplicate the staff time needed to answer I&R calls, supporting administrative and clerical efforts, and publicity initiatives to reach overlapping target groups. Reducing this activity has the potential to free up personnel resources for additional direct services to citizens.

Benefits for Planners and Funders

Information About Service Coverage and Need

A statewide 2-1-1 system would provide valuable information to legislators and administrators about the health and human service system, about gaps in this system and about the needs felt by the population. The integrated statewide database of health and human services would provide an accurate and up to date picture of what services are currently available and what services are missing in any given geographic region. When proposals are made to fund additional services, accurate and timely information would be available about service gaps. As the system becomes more widely used by citizens in all parts of the State, the pattern of calls to the 2-1-1 system would also tell legislators and administrators what services are most requested in each area of the State, and which of these needs were hardest to meet with currently available services. This information would allow legislators and administrators to more effectively plan services to meet the needs of citizens.

2-1-1 as Part of a Seamless Statewide Delivery and Response System

As the Connecticut 2-1-1 system can attest, the development of a seamless, integrated N-1-1 infrastructure can provide an invaluable foundation for state and local government, non-profit and private sectors to adequately and proactively prepare, prevent, detect and/or respond to crisis situations, such as natural disasters like the recent tornado that touched down in Maryland or the devastating terrorists attacks in New York, the Washington Metro area, and in western Pennsylvania. Indeed, Connecticut's 2-1-1 system provided, and continues to provide, assistance to families, businesses, providers and public agencies in the aftermath of the nearby terrorist airplane collisions into the twin towers of the World Trade Center in New York City. Many localities across the country are experiencing the development and implementation of multiple N-1-1 systems to include 2-1-1, 3-1-1 and 9-1-1, such as Charlotte-Mecklenburg, North Carolina, Orange County, Florida, Baltimore, Maryland, Pasadena/South Pasadena, California, and Dallas, Texas, among others. There is significant need to allow these systems to interface, primarily to allow for the rare, but essential emergency call that initially comes in through one of the other non-emergency dialing codes, and, equally important, to quickly off-load non-emergency calls received by 9-1-1 systems to the appropriate non-emergency N-1-1 telephone system.

The availability of a single dialing code, such as 2-1-1, as an access point for locating community resources also allows the organizations and agencies delivering the services to focus on their service mission, rather than expending their often scarce funds on raising their community profile and staffing their own referral lines. In developing services such as United Way 2-1-1 in Atlanta or Infoline 2-1-1 in Connecticut, the use of 2-1-1 has assisted consumers in simplifying access to the services of these organizations, providing visibility for those services, and often supplying coverage for agencies needing round-the-clock availability.

Reducing Requests for Specialized "800" Numbers

One of the benefits of a centralized I&R will be the ability to streamline I&R public and private expenses. Due to current "unknowns" in 2-1-1 system participation at this time, it is difficult to calculate the overall savings a centralized, more efficient, I&R will mean for both the private and public sector. However, in the interest of providing a context of cost savings that can be obtained, a conservative estimate of the cost of a specialized "800" number was calculated based on national and statewide I&R data.

The example illustrates the cost, both personnel and telephony, of a single specialized “800” number receiving 25,000 calls per year. These calculations result in a total cost of a specialized “800” number of \$135,759, and are outlined below:

Personnel: \$29.131 salary + 30% benefits package x 3²⁴ personnel = \$113,611
Telephony: (125,000 minutes x .1622²⁵) + 1,873²⁶ = \$22,148

It is important to note that at this time there are various groups, both public and privately funded, attempting to set up “800” numbers for specialized I&R in Maryland.

The benefits summary chart is outlined below.

Table 3.1 **Summary of Benefits**

<i>Category</i>	<i>Approximate Benefit</i>
<u>Individuals:</u>	
Reduced Frustration	Not Quantified
Time Saved Locating Services	\$1,081,272
Reducing Ultimate Cost of Services/Avoiding Expensive Alternatives	Not Quantified
<u>Employers</u>	
Reducing Lost Productivity	\$47,825
<u>Providers of Health and Human Services</u>	
Avoiding Inappropriate Calls	\$535,325
Reducing Inappropriate Evaluations	Not Quantified
Reducing Redundant I&R Costs	Not Quantified
<u>Legislators, Planners and Funders</u>	
Information About Service Coverage and Need	Not Quantified
2-1-1 as Part of a Seamless Statewide Delivery and Response System	Not Quantified
Reducing Requests for Specialized “800” Numbers	\$135,759

²⁴ Based on the following calculations: 25,000 calls per year x 5 minute average call time= 125,000 minutes
125,000 minutes / 261 days (minus weekends)= 479 minutes per day
479 minutes per day / 60 minutes = 8 hours calls
8 hours/6.5 hours (minus staff breaks) =1.23 personnel required
1.23 personnel x 2.0 (staffing factor) = 2.46, or 3 personnel

²⁵ Estimated per minute “800” service charge

²⁶ Line charge for the estimated 6 lines needed for service

IV. COSTS

Purpose

The purpose of this section is to define, describe, and calculate the costs of implementing and maintaining a 2-1-1 I&R system in Maryland. The Task Force's recommendations included a decentralized call center model comprised of three to six regional call answering centers with at least one serving as a single after-hours calling center, thus providing statewide 24-hour coverage.

To place the costs in perspective, comparison with a single statewide call-answering center providing 24-hour service was made. Consideration was also given to individual call centers residing within each of the State's 23 Counties and Baltimore City.

Assumptions

The most important element in determining the cost of a 2-1-1 system for Maryland is establishing the estimated call volume. Call volume is what governs:

- Staffing (I&R Specialists, supervisory and administration)
- Workspace (approximately 110 square feet per call answering position)
- Computer and telephone equipment
- Workstation furniture
- Call routing scheme (Area Code/Exchange of Zip+4)
- Database connectivity to statewide database (T-1 or dial-up)

The experience of other communities was explored as a means for establishing a projection for Maryland. This study suggested that Connecticut was the jurisdiction where 2-1-1 is in place that is most comparable to Maryland. Connecticut, like Maryland, is largely an urbanized state and it has a statewide 2-1-1 system that operates on a 24/7 basis. The per capita rate of calls in Connecticut is .06, meaning that 6 of every 100 residents in that state calls Infoline 2-1-1 at least once in the course of a year. Applying the Connecticut figure of .06 to the Maryland population of 5,296,450, produces a projected first-year Maryland call volume of 317,787.

Costs for the 2-1-1 system are separated into two primary categories: Start-up and Annual Operating. This separation allows preparation for funding of capital expenditures to establish the system and creation of budgetary requirements and projections for future years.

Start-up costs are those expenses required to initially establish the system. These costs would include, but are not be limited to, the initial purchase of the database application, establishment of the 2-1-1 telephone service in Maryland, construction costs, furnishing the center(s), installation of the technical infrastructure, and purchase of end-user computer equipment. Start-up costs are usually one-time, fixed fees, although some of these costs may be paid over a designated period of time.

Annual Operating costs are those expenses dedicated to operating and managing the call center(s) on a continuing basis. They include, but are not be limited to, salaries, benefits, training, professional certifications, lease or purchase of office space, recurring telephone service expenses, maintenance contracts on data and telephone systems, marketing, and office supplies. These costs are usually paid on a monthly basis and may, to some extent, be determined in advance.

It is important to note that some components in the cost analysis change periodically, such as telephony charges and technical infrastructure components. Therefore the figures included are accurate as of October 2001 and represent a good faith estimate for near-future planning.

Start-Up Costs

Table 4.1 **Estimated Start-Up Costs**

Facilities	\$266,250
Technical Infrastructure	\$151,900
Database Application	\$110,000
Telephone Expenses	\$181,419
Total Estimated Start-Up Costs	\$709,569

Facilities

The intention of the Task Force is to utilize existing I&R Service providers to operate and maintain the call center locations. A review of existing call centers within each region selected will provide more accurate cost estimates. Since the regions have yet to be determined, such a review was not conducted for this analysis.

An area of 110 square feet per workstation was used to calculate the required space for I&R Specialists. Other workspace area was added for supervisory and administrative offices, where appropriate.

Existing facilities may need no more than cursory modification. However, an estimate for the cost of fully furnishing each of the call centers was included in this analysis, should this be necessary. The number of workstations presented was based upon the number of personnel required to process the anticipated inquiry volume. The workstation furniture was priced as being a new purchase. The pricing came from a reputable manufacturer that specializes in commercial call center design. The chairs are also priced as new and are of a commercial grade with a fabric that possesses a high rub count and requisite flame retardant levels, which are both recommended industry-wide.

Table 4.2 Start-Up Physical Building/Floor Space Costs

Configuration	Inquiry Time	Inquiry Volume Year 1	Total Answering Positions	Inquiry Volume Year 2 (5% increase)	Total Answering Positions	Inquiry Volume Year 3 (5% increase)	Total Answering Positions	Area in Square Feet	Estimated Cost
Regional Call Centers (Existing Facilities)	5 mins	317,787* (.06 per capita)	19 17 CT 1 Supv 1 spare	333,676	19 17 CT 1 Supv 1 spare	350,360	30 18 CT 6 Supv 6 spare	Utilize existing call centers; analysis of each call center to be completed	\$76,950 Rent/Lease
Single Call Center (New Construction)	5 mins	317,787* (.06 per capita)	19 17 CT 1 Supv 1 spare	333,676	19 17 CT 1 Supv 1 spare	350,360	20 18 CT 1 Supv 1 spare	2500 (20 x 100 Sq. Ft., with an additional 500 sq. feet for offices, etc.)	\$300,000 Build

***Note: Anticipated additional inquiry volumes are due to the implementation of the 2-1-1 telephone number. These volumes are in addition to the inquiry volumes already received by each individual I&R agency.**

Table 4.3 Start-Up Office Equipment Costs

Configuration	Workstation Furniture	Cost Each	Chairs	Cost Each	Filing Cabinets	Cost Each	Total
Regional Call Centers (Existing Facilities)	30	\$5,500	30	\$750	6	\$300	\$189,300
Single Call Center (New Construction)	20	\$5,500	20	\$750	3	\$300	\$125,900

Technical Infrastructure

The technical infrastructure of the call center(s) is composed of the physical equipment needed to operate the database application, telephony systems and other related systems and applications. The technical infrastructure costs may be separated into two primary areas: Data and Telephony. Data infrastructure would be comprised of the required servers, data storage, client computers, monitors, hubs, routers, UPS systems, operating system software, virus software, and similar items. The telephony infrastructure would include telephones, headsets (if deemed appropriate), TTY equipment to meet ADA regulations, Automatic Call Distribution equipment, patch panels, and other miscellaneous items. It is recommended that the database application be placed on its own server to assist in disaster recovery.

One of the benefits of a decentralized regional call center model is quick recovery from catastrophic failures or events. The use of dual servers (with mirrored data) and network components, distributed at separate locations, allows redundancy of not only the servers and data, but the entire system. Should one facility and server experience a catastrophic failure, the second server would continue operation in a fail-over capacity, allowing the system to continue operating in a near normal capacity.

Multiple 24-hour call centers also provide increased continuity of operations capability. Should only one 24-hour call center be utilized, a catastrophic event or failure would disable the system until the next morning or until staff were contacted to report. A detailed continuity of operations plan should be developed for all critical elements of the system to ensure continued operation.

The following table estimates the required amount of equipment needed for call center personnel to process the expected inquiry volume. The telephone prices listed are for high-end equipment with the ability to display Caller-ID. Less expensive telephones are available and costs are affected by purchasing volume. Decisions on whether headphones will be used and whether existing TTY equipment is available will also impact final cost. The costs also reflect the purchase of Automatic Call Distribution (ACD) equipment. This will assist with statistical analysis of inbound and outbound calls and the time required to process inquiries from clients. The estimated cost to purchase new ACD equipment has been included, but this service also may be leased from the local telephone company providing service.

Table 4.4 **Start-Up Technical Infrastructure Costs**

Equipment	Quantity	Cost/Each	Total Start-Up New Purchase
Server	2	\$17,500	\$35,000
RAID 5 Hard Disk Drives	Included	Included	Included
External Tape Library	1	\$10,000	\$10,000
Monitor/KVM Switch/UPS	1	\$1,200	\$1,200
OS Client Licenses	25	\$1,500 Per 25	\$1,500
Additional Server Software	1	\$3,500	\$3,500
Network Hardware	1	\$10,000	\$10,000
Rack	1	\$1,000	\$1,000
<u>Cabling (Data and Voice)</u>	25	\$150 per seat	\$3,750
Client PC's w/21" Monitors	25	\$1,750	\$43,750
Telephones	20	\$90	\$1,800
TTY Machine	20	\$300	\$6,000
Headsets	55 (1 each)	\$80	\$4,400
Automatic Call Distributor	1	\$30,000	\$30,000
Total Estimated Cost			\$151,900

Database Application

The advent of 2-1-1 presents many new challenges for the health and human services I&R community. Communication and interaction among these organizations are destined to play an even larger role than ever before. Computer and telephony technology will join forces to revolutionize the manner in which current and future health and human services are accessed and delivered in Maryland.

Database application and management are the focal points of this evolutionary process. The Task Force and other 2-1-1 visionaries expect the database to make access to services and information easier through Internet and telephony gateways.

Currently, many of the 138 existing I&R providers in Maryland use a wide-range of proprietary database products, which are designed to meet agency or service needs. In recognizing the inherent obstacles and limitations this presents, the Database Development Committee of the Maryland 2-1-1 Task Force recommended that the Maryland 2-1-1 system utilize a single, statewide database.

The Database Development Committee also identified an extensive list of features that it believes must be incorporated in a software program on which the statewide database would be developed. Using site visits, limited telephone interviews, product demonstrations, e-mail surveys and research among national I&R communities, PSComm reviewed a total of 30 software programs. This study clearly identified that there is no industry leader today for I&R database applications. Further, it should be noted that new companies and new products are emerging.

Out of the group studied, four were selected for inclusion in this report as better examples of programs currently available. The table below shows the extent to which each of the four programs meets the requirements established by the Committee.

Table 4.5 **Database Comparison**

Software Applications	RTM Designs (Refer '00)	SunCoast (IRis)	VisionLink (Tapestry)	North Light (Resource House)
Functional Elements				
	Yes	Yes	Yes	Yes
Management	Yes	Yes	Yes	Yes
Taxonomy	Yes	Yes	Yes	Yes
Organizational Range	Yes	Yes	Yes	Yes
Updates	Yes	Yes	Yes	Yes
Information Sharing	Yes	Yes	Yes	Yes
Selected Software Requirements:				
• Storage Capacity	Yes	Yes	Yes	Yes
• Web Interface	Yes	Yes	Yes	Yes
• Navigation Ease	Yes	Yes	Yes	Yes
• AIRS Taxonomy	Yes	Yes	Yes	Yes
• Security	Yes	Yes	Yes	Yes
• Multi-Lingual	Yes	Yes	Yes	Yes
• Graphic & Text	Yes	Yes	Yes	Yes
• Future 2-1-1 Web Portal Integration	Optional	Optional	Yes	Yes
• Handle Central & Regional Call Centers	Yes	Yes	Yes	Yes
• SQL Capable	Yes	Yes	Yes	Yes
• Management & Statistical Reports	Yes	Yes	Yes	Yes
• Open or Closed Design	Open	Open	Open	Either
• Data Import & Export (MS Access)	Yes	Yes	Yes	Yes
• Support E-mail	Yes	Yes	Yes	Yes
• ADA Compliant	Yes	Yes	Yes	Yes
• Alert Dissemination	Optional	Yes	Yes	Yes
• Standards & Practices (back-end SQL)	Optional	Optional	Yes	Yes
• Confidential Notes	Yes	Yes	Yes	Yes

RTM Designs (Refer '00): Offers a full range of PC or web-based I&R software applications. The application accommodates large resource and transaction files as well as enables unlimited user access. All product offerings support IRis software applications. Refer '00 software is currently being used in at least two statewide applications. In an effort to develop affordable "Next Generation" PC and Internet-based I&R software, RTM recently partnered with Alliance Network.

SunCoast (IRis): IRis I&R software has a marked presence throughout the health and human service community -- many single agency operations use the product. The IRis product has been used in the industry for more than eight years. The release of a more robust version is expected in December 2001.

VisionLink (Tapestry): A web-based I&R application developed by social service professionals. This product is multi-lingual and interactive. Its modular design is comprehensive and provides an array of I&R capabilities and reports. VisionLink is in the process of building its statewide 2-1-1 health and human services I&R database clientele.

North Light (Resource House): Resource House basic application consists of three modules (the Hub, the Referral Provider Annex, and the Report 2001). These modules are designed to better meet the needs of I&R specialists, resource specialists, caseworkers and counselors, and customers. It fully supports IRis, and is scalable to meet agency or statewide I&R needs

A cost comparison is outlined below.

Table 4.6

Database Cost Comparison

Software Providers	<u>RTM Designs</u> (Refer '00)			<u>SunCoast</u> (IRis)			<u>VisionLink</u> (Tapestry)			<u>North Light</u> (Resource House)		
	<u>First Year</u>	<u>Second Year</u>	<u>Third Year</u>	<u>First Year</u>	<u>Second Year</u>	<u>Third Year</u>	<u>First Year</u>	<u>Second Year</u>	<u>Third Year</u>	<u>First Year</u>	<u>Second Year</u>	<u>Third Year</u>
(3 – 6) Regional Call Centers												
Multi-User License	\$15,000 – \$90,000			\$7,500 – \$15,000			\$90,000			\$75,000	\$75,000	\$75,000
Training	\$9,000 – \$18,000			\$1,200			\$4,000			\$1,200		
Support and Upgrade	\$3,000 – \$18,000	\$3,000 – \$18,000	\$3,000 – \$18,000	\$5,385 – \$10,770	\$5,385 – \$10,770	\$5,385 – \$10,770	\$5,940	\$5,940	\$5,940		\$11,250	\$11,250
Server Access	N/A	N/A	N/A	\$3,500	\$3,500	\$3,500	\$3,540	\$3,540	\$3,540	\$35,000	\$6,000	\$6,000
Total	\$27,000 – \$126,000	\$3,000 – \$18,000	\$3,000 – \$18,000	\$17,585 – \$30,470	\$8,885 – \$14,270	\$8,885 – \$14,270	\$103,480	\$9,480	\$9,480	\$111,200	\$92,250	\$92,250
Single Call Center												
Multi-User License	\$25,000			\$5,000			\$90,000			\$75,000	\$75,000	\$75,000
Training	\$3,000			\$1,200			\$4,000			\$1,200		
Support and Upgrade	\$5,000	\$5,000	\$5,000	N/A	N/A	N/A	\$5,940	\$5,940	\$5,940		\$11,250	\$11,250
Server Access	N/A	N/A	N/A	\$3,500	\$3,500	\$3,500	\$3,540	\$3,540	\$3,540	\$35,000	\$6,000	\$6,000
Total	\$33,000	\$5,000	\$5,000	\$9,700	\$3,500	\$3,500	\$103,480	\$9,480	\$9,480	\$111,200	\$92,250	\$92,250

Telephone Costs

Telephony expenses consist of two primary cost factors: one-time, non-recurring and recurring. One-time, or non-recurring costs are those charges for establishment of the 211 service with each provider of telephone service in the state. In other words, the “purchase” of telephone numbers, lines, connection fees, and similar services.

Establishment of service must be negotiated with each provider of local telephone service, wireless service, and pay/coin telephone service. These amounts include telephone network programming for call routing, development of routing schemes, and program management. There is no standard cost for service establishment in the U.S. The local exchange carrier in Maryland, Verizon, has determined that each application for 2-1-1 service will be reviewed on an Individual Cost Basis (ICB), so costs may vary from region to region throughout Verizon’s footprint.

Verizon’s decision to offer the service by ICB, negates the need for them to file a tariff (a document outlining pricing of a particular service) with the Maryland PSC. The PSC would most likely accept a tariff, should one be filed. However, a tariff does not eliminate the possibility of negotiating a better price.

In “211 State by State Nationwide Implementation of 211-Accessed Information and Referral Services”, the University of Texas at Austin compiled data on service establishment costs for existing 2-1-1 systems. Three of these systems involved Verizon: Florida (with Bellsouth and Sprint); Indiana – GTE/Verizon – (with Ameritech/SBC and Sprint); and North Carolina (with Bellsouth, GTE, and Sprint). Verizon’s service establishment charges average \$122.00 per central office (CO) and a \$45.00 per CO monthly recurring charge. Verizon’s ICB cost for Maryland averages \$776.72 per wire center (switch) as there are 212 wire centers in the state. Multiple switches may reside in the same central office. Verizon’s per call charge is estimated to be \$.03 for local calls.

The primary cost concern is the method of call delivery. There are two basic options: use of a local exchange carrier (LEC) and use of an 800 services provider. Either of these methods would require translation of the three-digit 2-1-1 telephone number into another telephone number (10-digit or 800 number) for delivery to the designated call centers (service establishment fees).

With a statewide system, use of a local exchange carrier would also require the use of a long distance carrier to deliver calls across intra-state boundaries. These boundaries are called LATAs or Local Access and Transport Areas; there are four LATAs in Maryland, dividing the state into western (Hagerstown Regional Toll Calling Area), Southern (Washington Regional Toll Calling Area), Central (Baltimore Regional Toll Calling Area), and eastern (Salisbury Regional Toll Calling Area) regions. Calls made within the LATA are called *Intra-LATA* calls and may incur charges, if not made to another party within the originating calling region. As an example, a person residing in Owings Mills may call someone in Baltimore City or in Westminster without incurring additional charges. However, a person residing in Baltimore City will be charged additional fees when calling someone in Westminster.

Calls made that originate in one LATA and terminate in a different LATA are called *Inter-LATA* calls. In this instance, the local exchange carrier would have to deliver the call to a long-distance carrier for the remaining transport of the call to the receiving party. Therefore, locating call centers regionally within the designated LATAs, would significantly reduce required long-distance carrier expenses.

The use of an 800-services provider eliminates any toll charges that may be incurred, but still requires the payment of service establishment fees to local telephone service providers and the per call fees from each.

Should multiple call centers be used, the service establishment fee would increase. This cost would include testing of switches with different telephone number translations (211 would be translated as 410-123-4567 in one region, while translated to 410-789-0123, in another). The use of a designated call center within each county and Baltimore City would increase this cost even further, based on the required increase in work associated with service establishment in so many areas.

The use of twenty-four separate call centers would require the development of a Zip+4 database to deliver jurisdiction-specific calls to the individual centers. This database is expensive to create and maintain, as the local telephone company would have to contract these duties to a third-party vendor. The use of Area Code/Exchange routing is less complicated, but would not ensure delivery to the correct call center and would increase the number of transfer calls and time required to determine if the caller was served by the call center receiving the inquiry.

Table 4.7 **Start-Up Telephone Costs**

<i>Configuration</i>	<i>Delivery Method</i>	<i>Service Establishment Fee</i>	<i>Order/ Connection Fees</i>	<i>Total Estimated Start-Up Costs</i>
3-6 Regional Call Centers	LEC Long Distance 800 Svc.	\$181,132	\$287	\$181,419
Single Call Center	800 Services	\$164,665	\$87	\$164,752

Annual Operating Costs

Table 4.8 **Estimated Annual Operating Costs**

Facilities	\$76,950
Technical Infrastructure	\$10,000
Database Application	\$90,000
Telephone Expenses	\$203,725 (incl. \$100,000 Long Distance)
Personnel	\$4,891,624 + Recruiting/Selection Costs
Administrative Costs	\$1,017,615
Marketing/Public Education	\$1,275,000 ²⁷
Total Estimated Recurring Costs	\$7,564,914

Annual operating costs are those expenses dedicated to operating and managing the call center(s) on a continuing basis. They would include, but not be limited to, salaries, benefits, training, professional certifications, lease or purchase of office space, recurring telephone service expenses, maintenance contracts on data and telephone systems, marketing and public education, and office supplies. These costs are usually paid on a monthly basis and may, to some extent, be determined in advance.

Facilities

Included in this estimate are building and office space costs. Final costs would also include energy expenses, lighting, and miscellaneous expenditures such as garbage disposal, municipal water supply, and snow removal.

The use of existing facilities should incur expenses only for that portion used. This would include the lease or rent of the required space for call takers and a portion of the electrical and HVAC (Heating, Ventilation, Air Conditioning) systems. These estimates will be based on the location of the call center and its ability to provide the required services. The estimated call volumes for each designated region will have to be determined and each potential call center will have to be surveyed to determine whether the existing facilities have the ability to support the required operations. The call volumes will determine the necessary area required for call takers.

The final call center configuration will determine costs for rented/leased space. Based on United Way of Central Maryland's estimate of \$15.00 per square foot, the estimated yearly cost for the required space for the regional call centers would be approximately \$76,950. The expected inquiry volumes require a maximum of 20 call taking positions, in addition to supervisory and administrative staffing. The use of 24 call centers would require many more positions (at least 24 - one each). Larger areas will require multiple positions, while smaller areas may not be able to support the operation of a single position. Each facility and county/City will have to be evaluated independently.

²⁷ Based on a \$1.5M total budget estimate for the public education campaign with an 85% concentration in the first year. Accordingly, second year costs will be \$225,000 and subsequent years should have nominal ongoing expenses.

Technical Infrastructure

Annual operating costs for technical infrastructure would include replacement of malfunctioning equipment and any additional equipment purchases. The purchase of a maintenance agreement with a vendor at the time of initial purchase of equipment (negotiated based on the amount of equipment purchased) would eliminate much of the recurring costs. The cost estimate for maintaining the hardware and other equipment is approximately \$10,000.

Database Application

The database maintenance will be performed by persons employed specifically for that purpose. Annual operating costs are primarily for licensing renewal fees, if applicable. Cost estimate for this, based upon the most expensive cost quotes received, is \$90,000. This may be reduced significantly by purchasing a less expensive software package or negotiating an agreement with the vendor.

Telephone Charges

Recurring costs are associated with monthly telephone service charges. These charges are usually based on the number of telephone lines used, the number of calls received, and the number of outbound calls made. This may also include any leased telephone equipment.

For this analysis, estimates on leased T-1 access for transfer of data between the designated call centers and the database location are included. Use of dedicated T-1 lines will provide reliable access to data exchange. T-1 access may not be available at all sites and the costs are based upon distance from the provider's facility or point of presence (POP).

As previously stated, call delivery may be accomplished in two ways, use of the local exchange carrier and long-distance carrier or use of an 800 services provider. Both of these methods have one leg of the call in common: the access leg.

The initial "leg" of the call is the access leg, that portion of the call that originates with the calling party and terminates at the local serving switch. This portion of the call may be paid for in two ways, by the calling party as part of his/her local calling plan or by the call center (the call would be reverse-billed). Allowing this leg of the call to be billed as a local call to each individual's local calling plan will reduce the overall expense of telephone service and still permit the overwhelming majority of person's to call without being charged a fee (the majority of persons with wire line service have an unlimited calling plan).

The 2-1-1 telephone number is translated into the 10-digit call center number or into an 800 number at the local serving switch. This requires that the telephone switches be reprogrammed to recognize the dialed numbers and perform the translation. This would be charged as a one-time, non-recurring fee.

The next leg is the delivery of the call from the local serving switch to the call center. From this point, the remainder of the call is billed to the call center. The local serving switch will initiate the routing of the call to the call center in one of two ways. If the call center is local it will be billed at approximately .03 cents per call. Should the call be handed off to an 800 services provider, there would be a maximum charge of approximately .03 cents per call by the local exchange carrier, in addition to an estimated .1622 per minute 800 services charge.

Should the call be out of the calling party's local calling region, but still within the LATA (Intra-LATA), then it will incur an incremental toll charge from the local telephone company. The intra-LATA toll is based on hourly usage, which decreases as usage increases (Verizon advises 0-15 hours per month, \$14.40 per hour; 15.1-40 hours per month, \$13.14 per hour, etc.). Should the call be handed off to an 800 services provider, there would be a maximum charge of approximately .03 cents per call, in addition to the .1622 per minute 800 services charge.

Delivering the call across LATA (Inter-LATA) boundaries would force the local service provider to hand off the call to a long-distance carrier for the remainder of the journey. This would not only incur the .03 cents call fee, but also any long distance charges accrued for the length of the call. Should the call be handed off to an 800 services provider, there would be a maximum charge of approximately .03 cents per call, in addition to the .1622 per minute 800 services charge.

The use of regional call centers would include a combination of local and long-distance calling charges, unless an 800 services provider is used. This is less expensive than the use of a single call center for all calls.

A single call center receiving all calls within the state would accrue a large amount of long-distance charges if service were established with the local exchange carrier using a long distance company to complement the service. The alternative of using 800 services to deliver calls to one or more call centers may be more cost effective and would allow more accurate estimation of charges. Should the local provider be used, a reevaluation should be conducted after one year to determine the long-distance charges accrued and a comparison made to 800 services delivery.

The transfer of received calls to other service providers would incur a charge for each call transferred. Each call transferred would be considered an outgoing call and be charged as such to the customer's (2-1-1 call center) monthly telephone bill. The call center would pay for the incoming call and the transferred call to the designated resource until that call is terminated.

The annual costs for telephony are based on estimated pricing from telephone vendors (Verizon and AT&T). This will change with contract negotiation. Should the 2-1-1 call center structure permit use of state-awarded contracts, the price may be further reduced to reflect rates paid by the State of Maryland.

Table 4.9 **Annual Operating Telephony Expenses²⁸**

Configuration	Delivery Method	Service Establ. Fee	Order/ Connection Fees	Line Fees	Usage Inbound	Usage Outbound	Leased T-1 Access	Total
3-6 Regional Call Centers	LEC Long Distance 800 Svc.	\$181,132	\$287	\$22,327 (24 Lines at Primary, 12 lines at each of other 5 Centers) \$1,873 (6 lines 800 Svc. at Primary)	\$9,534 + Long Distance Charges \$37,416 (14% 800 Svc. After Hours Overflow)	\$5,288 + Long Distance Charges (20% Transfer Rate)	\$27,000 (Single T-1 to each of 5 Centers)	\$103,725 + Long Distance Charges (\$100,000) \$203,725
Single Call Center	800 Services	\$164,665	\$87	\$7,491 (24 lines)	\$267,259	\$27,959 (20% Transfer Rate)	\$0	\$302,796

²⁸ Usage charges are based on the estimated inquiry volume of 317,787.

Personnel Requirements

The basic assumptions that underlie the staffing projections that follow are:

- The typical line agent can handle on average 1 call every 7.5 minutes or 4 inquiries per ½ hour;
- The Average inquiry = 5 minutes talk time;
- Each inquiry requires 15 seconds of wrap time;
- Each I & R Specialist will take a 10 minute break every hour;
- The unavailability rate per agent is 1.25 hours/day; and,
- 95% of the time, an I & R Specialist will answer the phone without call abandonment.

The number of personnel required to efficiently manage and operate the 2-1-1 system is dependant upon the estimated inquiry volume and call center configuration chosen. Although a single Statewide Administrator position may be appropriate, the number of Call Center Directors hired will be dictated by the number of call centers of sufficient size to require a Director. One Database Administrator and six Resource Specialists should be sufficient for initial implementation for the centralized and regional models. Supervisors, Senior I & R Specialists and I & R Specialists are determined first by the selected call center configuration and second, by the inquiry volume received by each call center.

The methodology used for calculating the total projected calls was described under Assumptions earlier in this analysis. The methodology used to establish the spread of these calls throughout any single day is drawn from a "Line Staffing Model" developed by the United Way of Metropolitan Atlanta. This formula has been used by Atlanta 2-1-1 and was introduced as a tool by other I&R call centers at the Alliance of Information and Referral Systems conference in 2000.

The Atlanta formula suggests that 90% of the 317,787 calls expected to be received during the first year by a Maryland 2-1-1 system will be received during the Monday through Friday workweek and that approximately 86% of the calls will be received from 8:00 a.m. to 6:00 p.m. during the workweek.

Personnel Structure

The recommended organizational staffing structure is as follows:

- Statewide Administrator
- Call Center Directors
- Call Center Administrative Coordinators
- Call Center Supervisors
- Senior Resource Specialist (Database Administrator)
- Senior Information and Referral Specialists
- Resource Specialists
- Information and Referral Specialists (Full-Time/Part-Time)

The estimated minimum number of FTEs (employees that work more than 35 hours/week) required to operate the regional call centers as shown in the Annual Operating Costs table is 86. This includes administrative, supervisory, inquiry receipt and database support staff. It is recommended that 30 part time personnel (employees who work less than 30 hours per week) be employed to provide scheduling flexibility. These part time personnel would handle inquiry overflow, backfill positions during busy hours, or staff positions during night and week end hours.

A Statewide Administrator would be employed at a rate of \$65,720/year and Call Center Directors at a rate of \$52,610/year. A Call Center Administrative Coordinator for miscellaneous secretarial/receptionist duties would be employed at a rate of \$36,560/year.

The estimated cost for a Director's position is \$52,610; a supervisor's position is \$39,500 per year (based on the Bureau of Labor Statistics mean wage for Customer Service Representative Supervisors and a 6% increase for the I & R skill base). The number of Directors and Supervisors required is based upon the number of call centers utilized.

In 1999 the United Way of America conducted a survey of United Way I&R programs throughout the country and found the median salary of I&R Specialists working for the largest local United Way organizations was \$27,665. In 2000, they estimated (based on 1999 survey and adjusted using the US Dept. of Labor Statistics) the median salary to be \$29,131. This salary amount increases to \$36,414 per FTE per year when including a benefit package.

The total cost for salaries for the 86 FTE positions required (6 of whom could be Senior I & R Specialists with a \$3,000 step over the I & R Specialist position) is estimated at \$3,013,498. We estimate the 30 PTE positions to cost approximately \$436,965 (\$14.00 per hour, no benefit package included).

The maintenance of the database and associated equipment is another area where personnel are employed. The Database Administrator's salary, based on BLS data for the metropolitan Baltimore Area, is approximately \$48,470 per year. Six Resource Specialists may be employed at the same rate as an I & R Specialist.

This equates to a personnel cost, including benefit package, of \$4,891,624 for the number of staff required to operate the proposed regional call center configuration. Hourly rates appear in the table below.

Table 4.10 **Hourly Personnel Rates**

Title	Number of Positions	Yearly Salary	Hourly Pay Rate
I&R Specialist FTE	36	\$29,131	\$14.00
I&R Specialist PTE	30	Based on hours worked	\$14.00
Resource Specialists	6	\$29,131	\$14.00
Administrative Coordinator	6	\$36,560	\$17.58
Senior I & R Specialist	6	\$32,131	\$15.45
Call Center Supervisor	24	\$39,500	\$18.99
Database Administrator	1	\$48,470	\$23.30
Call Center Director	6	\$52,610	\$25.29
Statewide Administrator	1	\$65,720	\$31.60

The Annual Operating Costs table provides an overview of the two primary configurations under consideration and a total for estimated personnel costs. It should be noted that the higher the number of call centers, the higher the associated personnel costs. The reason for this is that each center must minimally staff at least one call taking and one supervisory position and ensure that the position is staffed during all operating hours. This typically requires additional personnel to cover for absenteeism and breaks. The cost estimates do not include miscellaneous staff required for cleaning services and general building maintenance.

The total estimated annual personnel budget is \$4,891,624.²⁹ The growth rate pattern for the Connecticut 2-1-1 model has not yet been established so further staffing projections were not made. Connecticut did experience a three percent increase in inquiries from the first year to the second, however this would not result in an increase to current Maryland staffing projections from the first year to the second and the second year to the third. After the third year, this sustained growth pattern will require additional staffing.

Although not reflected in the annual operating costs table, turnover rates for private sector call centers are estimated at 11.6-17.8% per year for full time employees and 12.79 for part-time employees. It is not anticipated that the turnover rate for the 2-1-

²⁹ Total personnel estimate does not include recruiting and selection costs. Most likely these expenses will be realized by individual I&Rs and not the 2-1-1 system. According to United Way budgeting formulas this expense is 43% of the annual salary for hourly staff (29% recruiting and 13% selection).

1 Call Center will be as high.³⁰ Hiring costs for private sector call centers range from \$5-18,000 per year³¹ depending on the size of the call center.

Public Education Campaign

The purpose of the public education campaign is to introduce and inform all Marylanders about the 2-1-1 system, its use and benefits. One of the key features of 2-1-1 is that it is easy-to-remember and easy-to-use. When Atlanta moved to a 2-1-1 system, they experienced a 33% increase in calls by the end of the first 9 months with what they described as minimal marketing. Connecticut's call volume increased approximately 40% during the first year of 2-1-1 services (spending \$300,000 for the first year campaign). Building and promoting an awareness of the 2-1-1 system will be an indisputable key for a successful implementation of the 2-1-1 system in Maryland. That is, constituents must know of a system before they will remember and use the system.

Beyond raising awareness, marketing and publicity initiatives should also educate users about when to use 2-1-1. Unless users know what type of calls are appropriate for 2-1-1, they may neglect to use the system (because they are unaware of the breadth of services information available) or may use the system inappropriately. Similarly, joint planning with local 9-1-1 and 3-1-1³² officials is important in all marketing efforts.

Target Audience

The target audience for the 2-1-1 public education campaign includes two distinct categories, stakeholders and the general public.

The stakeholder group includes the organizations throughout Maryland that will benefit from utilizing the 2-1-1 system through improved efficiencies and cost reductions in their operational business and customer service processes.

Stakeholders include:

- State, county and local agencies and departments
- Community service groups
- Consumer groups
- Education systems and support services
- Family, youth, senior and persons with disabilities support services
- HMOs and insurance organizations
- Health care services, providers and hospitals

³⁰ Hiring Costs per Call Taker = Calculated by dividing total annual recruiting and new personnel training expenditures by total number of call takers hired within that fiscal year. The Benchmark of 5-18,000 reference is Dr. Jon Anton, Benchmarking Study, 1998.

³¹ Call Taker Turnover Rate = A metric used to quantify, as a percentage, the number of call takers discontinuing employment. It is calculated by dividing the total number of call takers leaving the center by the total number of call takers at the beginning of the period

³² 3-1-1 is currently available in Baltimore City.

- Legal services organizations
- Religious organizations
- Volunteer organizations
- Work supports: Financial assistance and income security organizations

The other category, the general public, includes the entire population of Maryland.

Timing

The introductory multi-media public education campaign will require a three-month planning and preparation phase, followed by a six-month campaign execution. The kick-off date will be set in coordination with the implementation phase of the 2-1-1 effort.

Cost

Cost for the public education campaign will vary depending on components selected, with advertising as the most exponential budget category, including print news media space, broadcast advertising spots, billboard and Metro/public transit print ads. For an effective statewide campaign in Maryland, a budget in the range of \$1.2-1.5 million is recommended.

Recommended Components of the Public Education Campaign

Branding: To ensure the integrity of the 2-1-1 brand and messages, retaining a graphic design firm is essential. A design firm specializing in cause-marketing or non-profit clients is highly recommended; small to mid-size firms are typically more flexible to work with and more cost conscious for their clients.

Collateral: Brochures and Flyers – A complementary collateral set of brochures and flyers is recommended for cost-effective print communication.

Brochure/Information Kits for Stakeholders

- Information kits will serve to educate and engage the support of the 2-1-1 system's stakeholder network (described above). The kit, estimated to be in the median price range of \$4 - \$6 with all enclosures, will include a simple pocket folder containing:
 - Personalized cover letter from 2-1-1 Chair.
 - Stakeholder brochure – details 2-1-1 system process, benefits to stakeholders, how-to participate and referral information
 - 2-1-1 poster
 - 2-1-1 promotional items with referral information for employees (e.g. telephone sticker; message holder)
 - 2-1-1 flyer stand
 - 2-1-1 flyers (starter quantity)

Flyers (General Public): Flyers printed in English and Spanish on limited-text, colorful, bi-fold light-weight inserts that are designed for low-cost mass production (<30¢ ea.) and sized appropriately for mailing in standard envelopes. Flyers will serve to communicate only highlights of the 2-1-1 System and will create a call-to-action response by driving traffic to a Maryland 2-1-1 website or by prompting a phone inquiry. For added-awareness, flyers could include a removable information sticker.

Flyers will be distributed in conjunction with community outreach programs, direct mail, and a variety of other publicity components. Flyers will be displayed and available for pick-up by visitors to the lobby/waiting room areas of state, county and local offices; hospitals; education centers and other stakeholder channels described under Target Audience, above.

Direct Mail: For an integrated communication program, direct mail is essential to reach both the primary in-need individuals who may be less mobile or more restricted in their daily routines (e.g., seniors, people with disabilities), and the secondary audience (family, friends, community helpers) who will be informed in mass. Direct mail campaigns will most commonly be distributed in cooperation with the stakeholders' outreach programs by mailing to their member/customer databases.

Other representative high-volume, low-cost direct mail channels utilizing flyers will be evaluated such as; electric utility bill insert, heat/oil utility bill insert, local telephone service bill insert, real estate tax bill insert, cable television bill insert, and State/federal agency mail insert. Also, an alternative to the flyer insert is a 2-1-1 article in the monthly news of these service providers. This initiative could be an extension of a media relations program, described later in this section.

Website: Maryland's 2-1-1 System will build an informative website for the general public and stakeholders. The look of the site will be consistent with the branding used in the collateral system, advertisements, and others. Website content will repeat and augment information in printed communications, and serve as a link to and from 2-1-1 Maryland resources, as well as other 2-1-1 organizations nationwide. Traffic to the site will be driven primarily by flyer distribution, advertising and links from 2-1-1 Maryland resources and targeted government, civic and promotional websites.

Media Relations: A news release campaign, kick-off news conference and frequent appearance in the press are essential to public education. This media campaign, conducted by a PR agency or freelance professional, will serve to both inform Maryland's constituents and to earn favorable publicity nationally on Maryland's proactive efforts in the wake of September 11th and the extended Homeland Security initiatives.

News Release Program: A four-stage news release program will be implemented. Each release will be posted on PR Newswire and aggressively pushed by the PR team to the media for coverage. The 2-1-1 System four-stage releases will announce:

- System analysis results (pre-cursor to implementation)
- Kick-off of public education campaign

- Six-month update (incorporating response measurements, early success stories)
- Twelve-month report (incorporating annual measurements of benefits and improvements, and user success stories)

Kick-Off News Conference: The kick-off of the six-month publicity campaign will include a news conference, with media representatives invited from:

- Business press – regional, state and local
- Consumer press – regional, state and local
- Special interest publications
- Stakeholder publications
- Broadcast media – radio, cable and television
- National media – regional reporters

Editorial Opportunities: Editorial opportunities for 2-1-1 System spokespersons will be actively sought among the media by the PR team for inclusion in special interest articles that focus on public service or related topics. Estimated cost for media relations for a twelve-month period is \$6,000 to \$15,000 per month, relative to desired activity level, plus hosting costs of the news conference estimated from \$5,000 to \$10,000.

Community Outreach: The public education campaign to the community will be primarily integrated within the essential publicity components above, as well as reinforced by advertising options listed below. In addition, community outreach will include flyer and poster distribution to state, county and local offices; public schools and private institutions; youth and senior community centers; public libraries; public safety offices and other public service outlets.

Promotional Tools Give-Away Items--Stickers, magnets, pens, and low-cost give-away items (<\$1 ea) will be included for distribution through direct mail and stakeholder channels. For more attractive and expensive items, such as t-shirts or hats (\$10 - \$15 ea.), a co-branding program with a stakeholder is recommended. This will include a special co-brand design incorporating the stakeholder's logo and 2-1-1 System's logo. Cost sharing for this cooperative program will be necessary.

Slide Presentation--A professionally produced presentation (i.e. PowerPoint slides) will be created for 2-1-1 System promoters to use in meetings with stakeholders and community outreach leaders. The presentation will be reasonable in length (20 – 30 minutes to present) and will reinforce the messages of the print communication and website. A professionally produced presentation is estimated at \$5,000 for slide template design, basic messaging and automation. More expansive use of graphics, music and automation, if requested, will increase the cost.

Video Production--A 15-minute video or CD is an optional substitution for, or augmentation to, the slide presentation. Although it would likely be well utilized, a video would be more costly to produce and distribute, with an estimate of \$25,000 for production plus copies. Video production as part of a co-brand program with stakeholders will be explored for a cost-effective solution.

Advertising Options Components: A selection of advertising channels will be selected among the options below. Frequency and size or time-length of promotion will significantly affect the campaign's budget. Advertisements will reinforce brand and messages of the essential publicity components, and will have a call-to-action drive to the website and 2-1-1 information line. This also will be reviewed for a co-branding opportunity with a stakeholder's marketing program. It is important to note that many publications offer a special advertising rate for non-profits. Further analysis will be conducted to determine the most appropriate media outlets that offer high-circulation, demographic fit, and special interest fit.

Table 4.11

Annual Operating Costs

This table does not include the start-up costs for establishing telephone service, purchasing initial technical infrastructure, workstation furniture, chairs, or the selected database application. All personnel estimates are based on an expected caller inquiry volume of 317,787 inquiries per year.

Type	Unit Cost	Single Centralized		3-6 Regional		Call Centers	
		Number	Cost	3 Business Day Centers	3-6 Regional Day Centers	3 24-Hour Centers	Centers
Personnel		Number	Cost				
Statewide Administrator		1 FTE	65,720	N/A	N/A	1 FTE	65,720
Call Center Director(s)		1 FTE	52,610	3 FTE	157,830	3 FTE	157,830
Call Center Administrative Coordinator(s)		1 FTE	36,560	3 FTE	109,680	3 FTE	109,680
Call Center Supervisors		6 FTE	237,000	6 FTE	237,000	18 FTE	711,000
Senior Information & Referral Specialists		3 FTE	96,393	3 FTE	96,393	3 FTE	96,393
Senior Resource Specialist (Database Admin.)		1 FTE	48,470	N/A	N/A	1 FTE	48,470
Information & Referral Specialists		35 FTE	1,019,585	9 FTE	262,179	27 FTE	786,537
Information & Referral Specialists		17 PTE	247,614	6 PTE	87,393	24 PTE	349,572
Resource Specialists		6 FTE	174,786	3 FTE	87,393	3 FTE	87,393
Sub-Total			1,978,738		1,037,868		2,412,595
Total			1,978,738			3,450,463	
Personnel Benefits							
Payroll taxes							
FICA	7.65% of Salaries		151,373			263,960	
SUI	\$425 Per Employee		30,175			49,300	
Worker's Comp	.56% of Salaries		11,081			19,323	
Health Insurance	\$4,319 per employee		306,649			501,004	
Life Insurance							
Group Life	.46% of Salaries		9,102			15,872	
LTD	.58% of Salaries		11,477			20,013	
STD	.50% of Salaries		9,894			17,252	

Pension						
Pension	5% of Salaries		98,937			172,523
Thrift 403 (b) Plan	3% of Salaries		59,362			103,514
On-site Parking	\$2,400 per employee		170,400			278,400
Total Personnel Cost			3,837,188			4,891,624
Non-Personnel Cost						
Supplies						
General Office Supplies	\$500 per employee		35,500			58,000
Copying	.03 per copy/50,000 copies		1,500			1,500
Postage			4,200			4,200
Travel						
Local	Mileage and parking		3,000			3,000
Around State	Mileage, parking, and overnight stays		3,000			3,000
Conferences	\$2,500 per conference		7,500			7,500
Staff Training	\$1500 per person		106,500			174,000
Contractual Services						
Payroll Service	\$250 per payroll/26 pays		6,500			6,500
Legal Fees			50,000			50,000
Audit Fees			25,000			25,000
Tech. Infrastructure Maintenance			10,000			10,000
Database support and upgrades (excl. personnel)			90,000			90,000
Telephone (Including T-1 Access where applicable)			302,796			103,725
Estimated Long Distance						100,000
Rent/Lease	110 sq. ft. per person at \$15/sq.ft.		49,500 (3,300 sq. ft.)			76,950 (5,130 sq. ft.)
Insurance						
Directors & Officers			7,000			7,000
Property			3,000			3,000
General Liability			3,000			3,000
Crime			2,000			2,000
Umbrella			3,000			3,000
Travel Accident			600			600

Fiduciary			1,500			1,500	
Workers' Compensation			5,000			5,000	
Marketing			1,275,000			1,275,000	
Printing			5,000			5,000	
Consultants			50,000			50,000	
Administrative Cost (5% of Total Personnel Cost)			191,859			244,581	
	Total Non-Personnel Cost		2,241,955			2,313,056	
	Total Personnel Cost		3,837,188			4,891,624	
	Sub-Total		6,079,143			7,204,680	
Contingency Funding (5% of Personnel and Non- Personnel Costs)			303,957			360,234	
	Total Proposed Budget		6,383,100			7,564,914	