



SOUTHERN AREA CONSORTIUM OF HUMAN SERVICES

Literature Review: Teleworking in Human Services

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Executive Summary

As information technology continues to advance and become an integral part of our society, an increasing number of workplaces are implementing teleworking as an employment option. Teleworking has been defined as “a work flexibility arrangement under which an employee performs the duties and responsibilities of such employee’s position, and other authorized activities, from an approved worksite other than the location from which the employee would otherwise work” (H.R. 1722, 2010). Additional terminology used to describe this movement includes “telecommuting,” “remote work,” “distributed work,” “working from home,” “virtual work,” “mobile work,” and “workshifting” (Telework Toolkit, 2013; A Guide to Telework in the Federal Government, OPM-VI-I-1; Lister, 2010). From large federal government agencies to small businesses, employers are offering a more flexible work arrangement to many of their employees.

This review summarizes the existing research related to teleworking, with a focus on government organizations. Specifically, it provides information related to policies, procedures, best practices, challenges, and recommendations. It begins with background information on the concept of teleworking, the development of policies and procedures, legislation, and common issues in teleworking. The review then describes some of the programs that will be examined within the report, including how teleworking has been implemented in human service agencies in San Francisco and Utah. These agencies have provided details on the importance of screening, writing teleworking contracts, and implementing workers’ compensation agreements.

The next section of the report covers Human Resources issues including management and supervision, monitoring tools, employee contracts, and Worker’s Compensation. Next, issues including tools, equipment, computer platforms and confidentiality and security are reviewed. For example, it discusses issues of national security in federal government agencies as well as the importance of keeping client files confidential in human service agencies.

Positive impacts of teleworking are summarized, including the existing research that has been conducted on the cost-effectiveness of teleworking (e.g., Baffour & Betsey, 2000) and information related to workers’ productivity and performance (e.g., Lister, 2010). After a summary of challenges for agencies, managers, and workers and some lessons learned and recommendation the report outlines best practices and success stories of agencies which have effectively implemented flexible work practices.

As noted in the References section, the research that is presented in this report was obtained from a variety of sources including personal communication with agency employees, empirical studies, literature reviews, federal government reports, research institutes, legislation, and websites. The Appendix items provide additional information on experts in the field, useful websites, agency policy documents, and other resources.

Background

In 1973, Jack Nilles developed the terms “teleworking” and “telecommuting” to define the practice of working in a location that is outside of a traditional office space (JALA International, 2007). Since that time, as technology has advanced with remarkable speed, teleworking has become increasingly prevalent in the workplace. In 1990, the federal

government introduced an initiative called Flexiplace, which was designed to address potential problems in recruitment and turnover among federal positions (Joice, 2000). In 2008, 17.2 million Americans were found to be teleworking at least one day per month (Telework Trendlines, 2009). When business owners and contract teleworkers were taken into consideration, this number jumped to 33.7 million (Telework Trendlines, 2009). In 2011, it was reported that forty-five percent of U.S. employees were teleworking at least part of the week (Lister & Harnish, 2011). The most common location in which teleworking occurs is the employee's home, though cars and customers' place of business are also cited as being common telework locations (Telework Trendlines, 2009). Interestingly, in an examination of fifteen cities, San Diego/Carlsbad/San Marcos was indicated as having the highest number of teleworkers, 4.2% (Lister & Harnish, 2011).

Teleworking is beneficial to employers and employees due to a variety of factors. Overall, a strong case has been made for teleworking in terms of its potential benefits to agencies, employees, and the environment.

- For the employer, telework has been found to contribute to reduced company costs related to office space and parking, decreased turnover rates, increased productivity, and reduced absenteeism and tardiness (Baffour & Betsey, 2000).
- Providing options for teleworking also gives agencies a means to comply with the Americans with Disabilities Act of 1990 (Baffour & Betsey, 2000).
- For the employee, benefits include factors such as decreased commute time, more flexible scheduling options, and the option for providing care to dependents while working (Baffour & Betsey, 2000; General Services Administration, 2006a).
- Additionally, teleworking has been shown to be beneficial to the environment in terms of reduced fuel emissions and reduced use of electricity (Kitou & Horvath, 2008). This was the expectation of the Clean Air Act, which was instituted in order to help reduce the carbon footprint of the United States (Kumari & Raina, 1998).

Although teleworking may appear to be an ideal way to address issues such as traffic congestion, tardiness, pollution, and increasing gas prices, it is not without potential issues. For supervisors, it may be difficult to manage employees who are not present in the office, and to track productivity. For employees, it may be difficult to stay on task and remain productive without supervisors and coworkers to hold them accountable. Additionally, employees who telework and provide care to dependents at home may not be able to perform both roles successfully (Pamela Park, personal communication, December 21st, 2012). Furthermore, issues of security and confidentiality may arise for teleworking employees who are dealing with confidential material (Scarfone, Hoffman, & Souppaya, 2009). Still further, research has shown that teleworkers may be less likely to be promoted and grow within the workforce (Kreitner & Kinicki, 2007). Thus, due to these potential drawbacks, it is important for agencies to develop strong policies and procedures surrounding teleworking, and for the government to facilitate the development of these policies.

In the past few years, the government has played a major role in the development of legislation surrounding teleworking. In 2010, The Telework Improvements Act was passed, which required executive agencies to institute a policy in which employees would be able to telework (Telework.gov, 2011). That same year, The Telework Enhancement Act was passed, requiring federal agencies to provide teleworking opportunities to employees, to develop

teleworking policies, and to provide managers to those teleworking (Telework.gov, 2011). These policies set the stage for a more concrete and formalized view on teleworking.

The following report outlines several programs and includes details on specific policies and procedures that have been implemented within the agencies. An analysis of best practices, challenges, and recommendations for the future is provided along with a more detailed look into the cost-effectiveness of teleworking. Specific organizations used for this report and their most recent contact information are listed in Appendix A. Please note that not all of these resources were contacted as part of this research. Several best practice examples from human services and other government programs will be described next. The subsequent sections will have detail on issues including human resources, equipment, and confidentiality.

Human Services Programs and Functions Using Telework

- *San Francisco's CalFresh Pilot Program* (Leo O'Farrell, personal communication, December 18th, 2012) – The pilot program is made up of CalFresh eligibility workers only, with 3% of staff teleworking at the same time. Most of the teleworkers live outside San Francisco and work remotely on Mondays, Tuesdays, and Wednesdays, and return to the main office on Thursdays and Fridays. They were selected to participate based on seniority, competence, effectiveness, and attendance. The duties performed by teleworkers include working on processing CalWIN applications and completing reports, re-certifications, taking calls, etc. The teleworkers use a remote desktop from home, which allows them to access all the necessary files and information. Their completed tasks are tracked through a program called TMT and CalWIN. "Sametime" is used as a chat function for supervisors to communicate with teleworkers, as well as phone and email. Teleworkers are required to attend unit supervision meetings. The agency provides a computer, keyboard, mouse, monitor, and VOiP phones to teleworkers, and the workers are expected to have their own home office space, and DSL or cable internet. The teleworkers have access to a help line for IT issues, but on-site visits are not available. The pilot program has outlined specific tasks and steps to be completed by both the teleworkers and the supervisors, with a time frame of when the steps should be completed. The Human Resources Department developed a formalized document called the Telecommuting Program Guidelines and Participation Packet, which includes details on requirements, conditions, guidelines, and agreements for teleworkers. Overtime is not available, and specific work hours are established. Workers' Compensation is provided to teleworkers as long as the injury happens in the designated workspace during working hours. Telecommuters must not be responsible for child or dependent care.
- *The Department of Human Services in Utah* (Pamela Park, personal communication, December 21st, 2012) – The program currently offers teleworking to eligible employees. The majority of teleworkers work in offices of Recovery Services. Their duties include administrative assignments such as taking calls, making calls, checking records, and determining which individuals may owe money to the state. There is currently no system in place to track the number of employees teleworking at the same time. There are no set days for when teleworkers are required to be in the office, but they are required to come to the office one day per week or every other week to complete office paperwork or to attend meetings. Some social workers in CPS, foster care, permanency programs, and

those involved with the Family Medical Leave Act telework occasionally, but are not able to telework full-time due to the nature of their duties. There are some monitoring tools in place such as the SAFE program which tracks what employees are working on. Employees are also expected to call or email to let their supervisors know what they are working on at the beginning and end of the day. The agency provides a laptop and a smart phone, but teleworkers are expected to have their own internet connection. Teleworkers use a remote desktop program called Citrix. Teleworkers with dependents in the home are expected to have additional help to care for these dependents.

- *Delivering Accountable Services from Home (DASH), Child Protective Services, Harris County, Texas* (Anderson, 2004) - Harris County's CPS office began a pilot teleworking program (DASH) after a storm damaged their offices. Teleworking duties include making phone calls, checking emails, writing notes, and updating files. Non-teleworking duties include home visits and court appearances. Teleworkers are provided a phone, printer, fax, and laptop. They are trained in standards for a home office environment. They also have the option to use a telecenter at the Harris County Department of Social Services for additional duties such as meetings and supervision. Teleworkers are expected to call the telecenter to give updates on their location and work being completed. After implementing the program, employee satisfaction increased and turnover decreased.
- *Social Worker Palm Pilot Program, Child Welfare Services, Cecil County, Maryland* (Anderson, 2004). – Social workers in rural child welfare agencies use palm pilots to access all of their case files, take notes, make assessments, take photos, and manage appointments. They are able to telework using palm pilots while making home visits to clients. Reports indicate that the implementation of the program increased the accuracy of the notes.
- *Oregon Department of Transportation* (Dutrow, 2002) – Pilot teleworking programs were created with many employers across the state as part of a four-year program to create teleworking jobs and resolve issues. The program developed a checklist in order to establish a good home office space, and an assessment is utilized to determine eligibility. Analysis of the program indicated overall reduction in commute time, as well as general success with the program.
- San Diego Regional Center (Seth Mader, personal communication, January 31st, 2013)- The option for teleworking at the SD Regional Center was implemented close to twenty years ago, and was designed primarily for caseworkers. There are 480 employees at SDRC and 300 are case managers. The case managers generally telework one day every two weeks, but could telework one day per week if necessary. In order to be eligible to telework, applicants' performance evaluations need to be in good standing. After being accepted, they are required to complete training on home safety and home work environments. Employees who know they are easily distracted by home responsibilities such as housework and pets are generally discouraged from applying. There are some IT department members who telework as well as some managers, but case managers are the primary employees who telework. The duties completed while teleworking include paperwork, writing reports, completing case notes, and making phone calls. In order to

monitor what work is being done, teleworkers are required to write up a one-page document informing their supervisor of what tasks have been completed throughout the day. This is turned in to the manager's mailbox the next day. In addition, the office has a system to track when paperwork is turned in, how long notes are, etc. The teleworkers who wait to complete paperwork on their teleworking days are generally more productive than those who do not. The teleworking employees are not provided with equipment; they are expected to use their own. Teleworkers need a computer and internet connection at home in order to do the work. They can use telephone dictation for notes and messages as well. Citrix is used as the remote desktop program from which teleworkers can access all of their files. Reports indicate that the program is working well and that having a day to telework gives case managers a day away from the busy and hectic office environment. Teleworkers are covered under workers' compensation while working at home as part of an agreement written into their teleworking contract.

- *San Diego CRF Downtown Impact* (David Jones, personal communication, February 8th, 2013)- This agency provides mental health services to the homeless population of San Diego. There are currently six case managers working at CRF Downtown Impact in San Diego, all of which are able to telework throughout the day. Case managers are expected to come into the office in the mornings to sign out their equipment (laptop and phone), and are expected to attend required meetings, but do most of their work in the community. Although working at home is not an official policy at the agency, case managers have the option to complete their notes and casework from home. Citrix is used as the remote desktop provider for teleworkers. The agency does not currently have a method of tracking when teleworking is occurring or measuring productivity; teleworkers are trusted to work diligently and meet required standards. The agency has policies in place for appropriate computer and internet usage.
- *Rady's Children's Outpatient Psychiatry School Based* (Aly Brown, personal communication, January 18th, 2013)- The school based division of Rady's Children's Outpatient Psychiatry in San Diego is made up of fewer than ten therapists who travel to schools to provide services. The vast majority of administrative duties such as notes, calls, paperwork, and scheduling occurs on the phone away from the office or while driving. Employees meet at the office one time per week for a team meeting, but generally are away from the office. Citrix is used as the remote desktop program and notes can be completed on any computer that has reliable internet access and the Citrix software. The agency provides laptops and cell phones to teleworking employees, although interns are expected to use their own equipment.

Human Resources Issues

Management and Supervision. Despite the fact that implementing teleworking can benefit managers and companies (Lister, 2010), many agencies are still resistant to its implementation. For many agencies that do not offer teleworking, research indicated that the primary reason was resistance from management (Lister & Harnish, 2011). This resistance could be attributed to policy restrictions, confusion as to implementation, and concerns about security (Joice, 2000).

Additionally, many managers have concerns about monitoring progress without seeing employees physically at their desks (Anonymous, 2006b).

Supervising employees who telework differs from traditional supervision in several ways. Generally, supervisors of teleworkers manage remotely, with little or no face-to-face interaction (Baffour & Betsey, 2000). Due to the nature of this arrangement, it is important for supervisors to “set objectives, criteria, deliverables, and deadlines for the work to be accomplished by the teleworker...and to build the trust of subordinates” (Baffour & Betsey, 2000, p.127). Rather than being able to observe the progress of the employees as a supervisor typically would in an office, remote managers use task completion criteria to manage (Ruth & Chaudhry, 2008). It is important to designate a specific person such as a telework coordinator who will oversee teleworkers (A Guide to Telework in the Federal Government, OPM-VI-I-1). Common problems that may arise in supervising teleworkers include communication problems, group cohesion problems, technological problems, and problems with monitoring progress (Mahler, 2012).

In order to provide the best supervision to teleworking employees, it is important that both managers and employees receive the proper training. Training programs for supervisors and teleworkers can be found at http://telework.gov/tools_and_resources/training/index.aspx.

The Telework Agency Guide has presented the following advice for managers that have decided to implement a teleworking program (A Guide to Telework in the Federal Government, OPM-VI-I-1):

- Determine employee eligibility using criteria identified in an agency policy.
- Understand and assess the needs of the workgroup by having employees participate in the planning process
- Create signed agreements (detail is included in the Employee Contracts section below)
- Base denials on business reasons such as decreased performance rather than personal reasons
- Use good performance management practices for expectations and accountability by clearly identifying expectations. Additional information can be found at www.opm.gov/perform
- Communicate expectations
- Facilitate communication with all members of the workgroup
- Remain equitable in assigning work and rewarding performance rather than assigning work solely based on availability
- Make good decisions about equipment taking into consideration budget, security, and effectiveness
- Practice. Telework requires regular use and experience in order to be successful, including practice if telework may be required during emergencies.

The Flex Options Report (U.S. Department of Labor, 2009, p.28) gives additional advice for managers, stating that they should:

- Create a business proposal approach in which employees turn in a proposal detailing how they will accomplish their work and maintain productivity.
- Establish a review process for determining who will be eligible to telework
- Consider an employee’s performance and do not engage those with low performance in teleworking

- Involve the team by asking employee to discuss proposal with other team members
- Clearly outline expectations
- Conduct frequent reviews

A Guide to Telework in the Federal Government (p. 7) gives further advice for managers and supervisors:

- Implement routine telework to the fullest extent possible
- Treat employees equally and fairly in implementing telework
- Use criteria to identify eligible/ineligible employees
- Include telework in emergency response planning
- Do not require telework
- Do not terminate for reasons other than business/performance reasons

Time Cards/Reporting/Compensation. Due to the nature of teleworking, it can be difficult to determine the number of hours a teleworker works, when breaks are taken, and how much is being accomplished in the time. There is no set policy for teleworkers to track hours and complete time cards, but the Flex Options Guide states that “employees who telecommute should track their work hours in the same manner as they would in a company location” (U.S. Department of Labor, 2009, p. 46). Some agencies may require a teleworkers to email or call a supervisor each morning and afternoon with details regarding what work was completed. Others may have a system to track who signs in and out of the server. Ultimately, each company needs to determine the best option for reporting and tracking hours.

It is generally agreed that teleworking employees should receive the same basic pay and compensation as other employees (Baffour & Betsey, 2000). However, it is important to consider the fact that although teleworkers save on certain costs such as gas, meals, and work clothes, and childcare, other expenses such as home utilities may increase (Baffour & Betsey, 2000). It is up to the agency to determine the best policy for paying teleworkers and to make sure that compensation for teleworkers and non-teleworkers is equitable (U.S. Office of Personnel Management, 2011).

Workers' Compensation. Originally, teleworking was advertised as a popular way to help employees who had suffered previous injuries get back to work (Joice, 2000). However, this faded out over time due to risks to employees (Joice, 2000). Although teleworking activities don't typically cause injuries or fatalities (Dutrow, 2002), the issue of workers' compensation is an important one to consider when implementing teleworking in an agency. Over the years, policies and legislation have been implemented both to protect teleworkers, and to protect the companies that hire them. The most relevant of these is the OSH Act and Workers' Compensation. The OSH Act serves to protect the worker from sustaining injuries, while Workers' Compensation serves to compensate employees for injuries that have been sustained while working (Dutrow, 2002).

As teleworking became more popular over the years, it became necessary to examine the feasibility of implementing the OSH Act in home office environments. In 2000, The Home Workplace Preservation Act was implemented in order to protect employers from being liable for safety and health violations in a teleworker's home (Dutrow, 2002). The Home Office Protection Enhancement Act of 2000 and the American Telecommuter Protection Act made it so

that teleworking is not covered under the OSH Act (Dutrow, 2002). However, the Home Office Worker Protection Act of 2000 stated that OSHA *should* apply to teleworkers in certain circumstances (Dutrow, 2002). Ultimately, it was decided that “OSHA in the home is unmanageable and does not provide enough advantages to the employee to make it worth the intrusion into their privacy” (Dutrow, 2002, p.14).

Thus, companies and agencies need to develop their own policies regarding which accidents and injuries may be covered, and which may not (Baruch & Smith, 2002). For employees who are teleworking, it is important to report any injuries sustained and to keep all medical documentation related to the injury in case of investigation (A Guide to Telework in the Federal Government, OPM-VI-I-1).

Certain agencies are held to policies related to compensation for injuries. For example, federal teleworking employees “suffering work-related injuries and/or damages at the alternative worksite...are covered by the Military Personnel and Civilian Employees Claims Act, the Federal Tort Claims Act, or the Federal Employees' Compensation Act (workers' compensation), as appropriate” (A Guide to Telework in the Federal Government, OPM-VI-I-8).

The following recommendations are given as part of the Work Smart Process for implementing a Workers' Compensation policy for teleworkers:

1. Identify and document the work activities to be performed;
2. Identify and document the hazards associated with those activities;
3. Identify (or create) standards for safe performance of work to ensure that the hazards identified in step 2 are mitigated;
4. Perform the work; and
5. Periodically evaluate the work, hazards, and standards to ensure a safe environment. (Dutrow, 2000)

Employee Contracts. The popular consensus among researchers of teleworking is that companies should develop a written agreement regarding the teleworking arrangement. According to A Guide to Telework in the Federal Government, this agreement should include:

- Specific location of where teleworking will occur
- Inventory of Equipment
- Work tasks to be performed
- Contact information
- Safety checklist
- Emergency telework expectations

Additionally, any agreement that is made between the employer and the Teleworker should be re-discussed every few months to ensure that the arrangement is working for both parties (U.S. Office of Personnel Management, 2011). If change is necessary, the contractual agreement can be updated at that time.

The U.S. Office of Personnel Management, 2011 (p. 10) provides several recommendations for writing a telework policy or contract. The contract must be:

- Clearly understood
- Easily utilized

- Use familiar words
- Avoid ambiguous terms
- Be organized logically
- Designed to serve as a resource
- Cover program implementation, participant responsibilities, and program operations
- Include type of telework, schedule, requirements, expectations, equipment/expenses, information security, safety, and termination

For more specific details regarding writing telework policies and agreements, please refer to www.telework.gov/guidance.../U.S. Office of Personnel Management, 2011/U.S. Office of Personnel Management, 2011.pdf. Additionally, two examples of teleworking workers' comp policy can be found in Appendix E. For an example of a telework contract, please refer to Appendix G.

Monitoring Tools. Monitoring tools is an important issue when considering implementing a teleworking program, and has often been cited as a primary reason for manager resistance (Joice, 2000). The current problem is that there are not enough tools to measure employee productivity, task completion, and timeliness (Joice, 2000). However, the statement has been made that measuring productivity is not as important as measuring the quality of the work that is being done, and that managers need to develop a way to measure both (Joice, 2000). The ability to evaluate an employee's productivity is an important one that relates to the possibility of promotion, compensation, and more (Baffour & Betsey, 2000). For teleworkers, it may be difficult to be recognized and evaluated if work is being done off-site, away from the view of supervisors. The Department of Commerce and the Department of Justice are currently developing and implementing a system in order to track how many employees are teleworking and how often (Government Accountability Office, 2005).

Providing Equipment. The decision regarding providing equipment to teleworkers is one that agencies must make for themselves. It is generally accepted that agencies should provide equipment to teleworkers such as computers, modems, printers, and faxes if necessary (Joice, 2000). Usually, teleworkers are expected to pay for their own internet connection and utility bills. However, some agencies with a lower budget for teleworking may need teleworkers to purchase their own equipment (Joice, 2000).

Tools, Equipment, and Computer Platforms

Teleworking relies upon technology for its continued success and implementation in the workplace. This section examines the tools, equipment, and computer platforms necessary for the successful implementation of teleworking.

An important factor related to the successful implementation of a teleworking program is the involvement of the Information Technology (IT) department. This group is needed to aid in organizing the technology that teleworkers will need in order to be able to work from home. In the past, issues have arisen in that "organizations have reported that their IT functions impede telework because of fears and inadequate provisions regarding security of their networks, poor capability for supporting large scale remote access, insufficient resources/skills/procedures for remote technical support, and lack of awareness of new software/hardware options available to

facilitate telework arrangements.” (Joice, 2000, p.6) However, with the proper use of information technology, and a consistent relationship with the IT department when home connection problems occur, teleworking can be very effective.

A technology guide in Canada indicated that there are four tools that a teleworker must have in order to be successful: “1. reliable internet, 2. remote access, 3. encryption and backup, and 4. guidelines” (Aarts, 2011, p.1). Specifically, it recommends that teleworkers have adequate bandwidth of approximately 256 kbps (Aarts, 2011). Additionally, remote access is essential to accessing company data. Requiring teleworkers to backup information and use passwords is also essential to protecting the company’s data (Aarts, 2011). Finally, guidelines need to be in place related to teleworkers’ internet usage and access to outside websites. Generally, employers provide teleworking employees with the technological equipment necessary to work from home such as a computer/laptop, work phone, scanner, etc (Pamela Park, personal communication, December 21st, 2012).

In relation to problems with internet connectivity, one solution that has been offered is that of satellite technology (Salamoff, 2002). Because broadband via satellite does not rely on individual companies or ground infrastructure, it is easier for teleworkers who may be in more remote locations to receive a strong internet connection (Salamoff, 2002). Theoretically, this would allow companies to hire teleworkers who live in areas that may not generally be able to access strong internet connections.

In considering remote access, it is important for teleworkers to have remote desktop software which would allow them to access company files and data from home. One of the most common computer software programs that is utilized among teleworkers is Citrix Online. This program allows for remote desktop access, which enables teleworkers to access company files and data from their home office (Lister & Harnish, 2011). Within Citrix Online, there are programs such as GoToMeeting, GoToMyPC, GoToTraining, and GoToWebinar which allow users to attend meetings, trainings, and webinars in addition to accessing files (Lister & Harnish, 2011). More information about Citrix and detailed information regarding cost and licensing can be found at www.citrix.com. Starting cost is shown to be \$1,950.

One technological tool that is helpful for companies who may be considering implementing a teleworking program, or who would like to calculate savings from an already existing program, is the Telework Savings Calculator (Lister, 2010). In 2008, this tool was developed in order to help companies understand and quantify the benefits and savings of teleworking (Lister, 2010). The calculator can be found at the Telework Research Network’s website: <http://TeleworkResearchNetwork.com>.

Confidentiality and Security

Due to the use of remote access desktops, security is of critical importance for agencies implementing teleworking. For many businesses, company files may contain important information regarding practices and finance that is to be kept confidential. In the human services industry, files may contain confidential client information. The following section provides recommendations for good practice in implementing a teleworking security policy.

Some simple suggestions for creating a secure network include encrypting sensitive files and backing up information to a secure location (Aarts, 2011). Aarts also recommends that employers create a schedule for updating antivirus software. The National Institute of Standards and Technology (NIST) has created a detailed recommendations list for employers implementing

teleworking in their agency. These suggestions are as follows:

- Develop a telework security policy that defines telework and remote access requirements.
- Ensure that remote access servers are secured effectively and are configured to enforce telework security policies.
- Secure telework client devices against common threats and maintain their security regularly. (Scarfone, Hoffman, & Souppaya, 2009, p. ES1-ES2)

NIST has stated that there are several common security objectives that exist for programs related to teleworking. These objectives include confidentiality, integrity, and availability (Scarfone, Hoffman, & Souppaya, 2009). That is, that files cannot be read by people without access to them, that the system could identify interference of files in transit, and that the system can be accessed by users as needed. There are also several common threats to security that have been identified. These threats include “lack of physical security controls,...unsecured networks,...infected devices on internal networks,...[and] external access to internal resources” (Scarfone, Hoffman, & Souppaya, 2009, p. 2-2).

Key recommendations identified by NIST for supporting confidentiality, integrity, and availability are as follows:

- Ensure that all parts of teleworking and remote access are secured against threats.
- Develop system threat models.
- Assume that networks cannot be trusted.
- Assume that teleworkers’ devices will become infected with viruses and malware
- Consider pros and cons of providing remote access vs. what could happen if information is accessed.

The NIST also provides key recommendations for remote access security including the following:

- “Remote access servers should be kept fully patched, operated using an organization-defined security configuration baseline, and only managed from trusted hosts by authorized administrators” (Scarfone, Hoffman, & Souppaya, 2009, p.3-8).
- “Place remote access servers at the network perimeter” (p.3-8).
- Implement mutual authentication to verify legitimacy.
- Use cryptography to protect sensitive information.
- Plan how software security will be maintained, devices supported, and devices secured.
- “Use thick remote access clients whenever possible to reduce the risk of compromise” (p.3-8).

In addition to these recommendations, the NIST also suggests that teleworkers should have separate accounts for different functions. Additionally, agencies should implement session locking so that users need to re-enter the system after a period of being idle. Firewalls should also be used for additional protection. Finally, locking devices should be placed on equipment that may be in an unprotected area.

When planning to implement teleworking in an agency, the NIST has identified five phases which are designed to illustrate successful implementation of secure teleworking policy:

- Phase 1: Initiation- Identify needs, overall vision, high level strategy, security policy, specifying functional requirements
- Phase 2: Development- Identify and specify technical characteristics. Ensure that the policy can be used by all clients. Procure solution components.
- Phase 3: Implementation- Configure equipment to meet all requirements. Test equipment. Make any alterations.
- Phase 4: Operations and Maintenance- “security related tasks performed on an ongoing basis” (p.5-1).
- Phase 5: Disposal- When the program is no longer utilized, taking proper precautions and following protocol for properly disposing equipment.

For additional detailed information on this subject, please refer to the National Institute of Standards and Technology’s Guide to Enterprise Telework and Remote Access Security (Scarfone, Hoffman, & Souppaya, 2009) found in the References section of this document.

It is important to remember that security does not apply only to files saved on the computer. Physical notes and files should be kept confidential in locked cabinets and the workplace environment should be free of confidentiality and security violations (A Guide to Telework in the Federal Government, OPM-VI-I-1)

San Francisco’s CalFresh teleworking pilot program has created a document titled Remote Access User Guidelines which may be helpful in formatting remote access policies (see Appendix D).

Positive Impacts of Teleworking

Since the initial appearance of teleworking in businesses, extensive analyses have been conducted to determine the overall costs and benefits to teleworking. The majority of the research has pointed to positive cost benefits to teleworking, with specific references made to agencies, employees, and the environment. This section of the report summarizes existing research that supports the implementation of teleworking.

Cost-Effectiveness

- Company BellSouth estimated that if workers worked from home, the company could save up to \$40,000,000 in costs related to maintenance, utility costs, furniture, and real estate costs (Zbar, 2001).
- Gartner Group, research consultants, predicted that teleworking could save companies 15-20% on expenses related to real estate (Zbar, 2001).
- Research found that teleworking half-time could save agencies up to 18% on real estate costs. For example, IBM saves \$700 million per year in real estate costs due to its teleworking program (Lister, 2010).
- Qualitative and quantitative research methods have indicated that flexible time arrangements have a positive effect on management, finances, employee satisfaction, and business outcomes (WFD Consulting, 2005).

SACHS Literature Review: Teleworking in Human Services (February 2013)

- Quantified benefits to employers included increased productivity, reduced real estate costs, decreased turnover, and reduced absenteeism (Lister, 2010; Office of Workplace Programs, 2012).
- Teleworking could create a total benefit of up to \$400 billion for American companies if employees were required to telework half-time (Lister, 2010).

Cost Benefits to Managers and Agencies

- AT&T's teleworking initiative has saved employers approximately \$2,086 per employee in decreased absenteeism, and \$7,920 in costs related to decreased rates of turnover (Baffour & Betsey, 2000).
- Often, a company's lowered costs are related to office expense, parking, and paid sick leave (Baffour & Betsey, 2000).
- Elimination of instances of tardiness, increased attendance, and reduced turnover rates are known benefits of teleworking (Baffour & Betsey, 2000).
- Specifically, average absenteeism has been shown to be decreased by 3.7 days per year (Lister, 2010).
- "The U.S. GSA telework cost/benefit model shows a 63% reduction in unscheduled absences per teleworker" (Lister, 2010, p. 9).
- A study examining the effects of Results Only Work Environment at Best Buy Co, Inc. on turnover found that rates of turnover were significantly decreased among employees involved in the flexible time agreement (Moen, Kelly, & Hill, 2011).
- Teleworking has been shown to have a 25% decrease in turnover rates (Lister, 2010)
- In a study conducted at WorldatWork, researchers found that "Of the 62 percent of organizations that do offer telecommuting, almost half (46 percent) said the program has a high impact on employee retention" (World at Work, 2007, p.2).
- Reports estimate that requiring employees to work from home half-time could save employers up to \$10,000 per employee per year (Lister, 2010).
- Research at Sun Microsystems indicated that teleworkers were applying 60% of the time they saved commuting towards work (Lister, 2010).

Cost Benefits to Employees

- Elimination of costs related to commuting to work such as gas, mileage, and tolls are known benefits to teleworkers (Baffour & Betsey, 2000).
- On average, teleworking has saved employees \$362 per person per year on gas costs alone (Lister, 2010).
- Total company employee savings related to gas and work expenses has been shown to range from \$210,167-\$2,101,666 (Lister, 2010).
- Although home utility costs such as gas and electric increase for teleworkers, they end up with overall reduced expenses due to reduction in travel costs (Kitou & Horvath, 2008).

SACHS Literature Review: Teleworking in Human Services (February 2013)

- Quantified benefits include reduced gas expenses, saved time, and reduced expenses related to work (Lister, 2010).

Personal Benefits to Employees and Families

- Elimination of the emotional cost of commuting to work such as frustration in traffic, wasted time, and coordinating work commute with taking children to school (Baffour & Betsey, 2000).
- Employees may be less distracted when working from home (Baffour & Betsey, 2000; A Guide to Telework in the Federal Government, OPM-VI-I-1).
- A study of AT&T teleworking employees found that “employees’ benefits included increased satisfaction with their jobs, accomplishing more with less; increased control over their personal lives as well as increased autonomy and responsibility in their jobs” (Baffour & Betsey, 2000, p.123).
- Studies illustrate that flexible time arrangements moderate effects of “negative home-to-work spillover, physical symptoms, and job insecurity” (Moen, Kelly, & Hill, 2011, p.69).
- Research indicates that “individuals who have even a small measure of flexibility in when and where work gets done have significantly greater job satisfaction, stronger commitment to the job, and higher levels of engagement with the company, as well as significantly lower levels of stress” (WFD Consulting, 2005, p.2).
- Studies of IBM employees, Bristol-Myers Squibb employees, and a financial services company indicate that employees who are allowed more flexibility in their work schedule report significantly lower levels of stress and burnout (WFD Consulting, 2005).
- Working from home provides employees with opportunity to care for dependents such as children or elderly relatives in the home (General Services Administration, 2006b).
- May provide increased family interaction (Office of Workplace Programs, 2012)
- “Over time, teleworkers report less work and family conflict” (Bailey & Kurland, 2002, p.391).

Productivity and Performance

- Surveys have shown that decreased turnover correlates to a 15-30% increase in production, which has been demonstrated to have approximately \$10,000 in savings per teleworking employee (Hopkinson, James, & Maruyama, 2002).
- Research on Best Buy indicated that productivity levels increased on average by 35% after implementing a teleworking program (Lister, 2010).
- Research on Dow Chemical indicated that productivity increased by 32.5% after implementing teleworking (Lister, 2010).
- Compaq Computer Corporation’s teleworking employees’ productivity increased by 15-45% (Lister, 2010).

Impact on the Environment

- California-based study which used E-COMMUTair system to assess air pollution effects of teleworking found that traditional employee costs are higher than teleworking costs in every category including transportation, utilities, energy, fuel, and CO₂, CO, and NO_x emissions (Kitou & Horvath, 2008).
- Research indicates that “the existing 2.9 million US telecommuters save 390 million gallons of gas and prevent the release of 3.6 million tons of greenhouse gases yearly” (Lister & Harnish, 2011, p.4).
- Additionally, reports indicate that “the energy saved annually from telecommuting could exceed the output of all renewable energy sources combined” (Lister & Harnish, 2011, p.4).
- Quantified benefits included reduced oil usage, reduction of greenhouse gases, decreased incidents of accidents, and decreased highway maintenance costs (Lister, 2010).
- Specifically, the U.S. could save up to \$23 billion in oil import costs (Lister, 2010).
- Savings related to electricity have been estimated at 4,400 kWh per person per year (Lister, 2010).
- “The National Environmental Policy Institute (NEPI) estimates that allowing just ten percent of the nation's workforce to telecommute a mere one day a week would eliminate 12,963 tons of air pollution and save more than 1.2 million gallons of fuel each week” (Dutrow, 2002).

Challenges

Despite the many benefits that have been associated with telework, the implementation of a teleworking program is not without its difficulties. The following challenges have been cited as problematic for starting a teleworking program, managing teleworkers, and working as a teleworker:

Challenges for Agencies and Managers

- Resistance to teleworking is often seen by agency managers (Joice, 2000; U.S. Office of Personnel Management, 2012). Managers should be trained on teleworking in order to help decrease resistance.
- Employees are sometimes hesitant to give up their permanent office location (Joice, 2000). It is helpful to include them in the planning to determine the best course of action.
- Agencies often experience a double overhead situation in which they are paying for costs related to the telecenter in addition to costs incurred by teleworkers working from home (Joice, 2000). Be sure to consider increased costs when planning.
- It is generally more difficult to implement a teleworking program in a smaller agency as opposed to a larger company due to resistance (Joice, 2000). Managers and employees alike should be included in discussion on how to best implement the new program.
- It can be difficult to apply changing policies such as OSHA and Workers’ Compensation to teleworking contracts (Joice, 2000). It is beneficial to be very clear in which situations may or may not be covered.

- There tends to be a general lack of measure for productivity and effective monitoring tools (Joice, 2000; U.S. Office of Personnel Management, 2012). It is important to consult resources on monitoring tools if this becomes an issue.
- There has been question as to the accuracy of benefits and results associated with productivity and real estate savings (Ruth & Chaudhry, 2008).
- There are many technological challenges related to implementing a secure network and computer usage policy (Ruth & Chaudhry, 2008). Consult with the IT department to ensure effective implementation.
- If the issue of technology and security is not properly addressed, it can create major problems for companies (U.S. Office of Personnel Management, 2012). It is helpful to have a section of the contract detailing appropriate computer and internet usage.
- Employees who are not teleworking may be jealous of those who are (Litchfield, Swanberg, & Sigworth). It is helpful to have discussions with employees about who is or is not eligible to telework and how to apply.
- It has been stated that evidence is unclear as to real increased job satisfaction among teleworkers (Bailey & Kurland, 2002).
- Criticisms of reports of increased productivity relate to the fact that this data may often be based on self-reports (Bailey & Kurland, 2002).

Challenges for Teleworkers

- Teleworking eligibility may cause problems among employees, as those who are ineligible to telework may feel at a disadvantage, may experience lower job satisfaction, and may be less likely to stay with the company (Mahler, 2012). It may be beneficial to meet with employees to check in regarding performance and job satisfaction.
- Some teleworkers may feel isolated both socially, and within the company and feel more need for social interaction (U.S. Office of Personnel Management, 2012; Office of Workplace Programs, 2012). It can be helpful to arrange for team meetings or work related social events to combat this.
- Teleworkers may not have equal access to promotions and leadership opportunities (U.S. Office of Personnel Management, 2012). Train managers on the importance of including all members of the team when considering promotions and leadership.
- Some teleworkers may find that they are unable to resist distractions, are not able to work independently, may have conflicts with other staff members, and may feel left out of meetings and team experiences (Ruth & Chaudhry, 2008). It is important to check in with teleworkers to determine whether or not the arrangement is working for them.
- Many agencies require teleworkers to hire childcare providers while teleworking, and some teleworkers may be unwilling to do this (Ruth & Chaudhry, 2008). It is beneficial to be clear before hiring a teleworker about the expectations surrounding childcare.

Lessons Learned and Recommendations

Extensive analysis has been conducted of teleworking pilot programs as well as agencies that have an active teleworking program. The following lessons and recommendations are provided in order to aid in the future implementation of a teleworking program:

- Conduct a needs assessment and understand the culture of the agency before implementing a teleworking program (Joice, 2000).
- Managers must be able to facilitate a fair and effective working arrangement for teleworkers, while still maintaining a traditional management style with employees who are not ready or ineligible to telework (Joice, 2000).
- Managers should provide increased, not decreased support to teleworkers (Joice, 2000).
- Managers should consider implementing monitoring tools not just for productivity and task completion, but also to monitor quality (Joice, 2000).
- It is important to allocate the resources needed to implement the program before actually doing so (Joice, 2000).
- Before creating a company-wide teleworking program, create a pilot program first to test success (Mahler, 2012; U.S Department of Labor, 2009; Joice, 2000).
- Guidelines need to be in place to address the issue of dependent care (U.S. Department of Labor, 2009; General Services Administration, 2006b).
- A policy needs to be in place in order to address the issue of Worker's Compensation for teleworkers (U.S. Department of Labor, 2009).
- Agencies should conduct a cost analysis before implementing a teleworking program to ensure that the benefits will outweigh the potential costs (General Services Administration, 2006a).
- Managers need to be trained on how to supervise teleworkers (Anonymous, 2006b)
- A member of the organization should be designated as the telework coordinator to oversee all aspects of teleworking in the company (A Guide to Telework in the Federal Government, OPM-VI-I-1).
- The telework coordinator should be responsible for duties such as assigning tasks, establishing communication, state time frames, clarify the quality of work expected, establish review periods, provide feedback, and work to correct unsatisfactory behavior (Office of Workplace Programs, 2012).
- Ensure that teleworkers can design their work processes, and that necessary IT support is available to them (Joice, 2000).
- Determine communication standards for teleworkers who are dealing with information that is urgent, somewhat urgent, or not urgent (Department of Labor, 2009).
- "Gain leadership buy-in, involve critical functions, institute reliable data collection, standardize eligibility and participation criteria, measure performance accurately, ...be patient" (U.S. Office of Personnel Management, 2012, p. 63)
- "Maximize hoteling in order to decrease office space, encourage teleworking for those with longest commute, consider cost transfer to employees, consider local electricity mix, be flexible with program design, use information and communication technology effectively,...and educate teleworkers about how to save energy while teleworking" (U.S. Office of Personnel Management, 2012, p.85).
- Connect the telework initiative to the agency's other objectives and mission (Joice, 2000).
- It is important to choose motivated and technologically savvy staff, to properly develop the remote desktop programming, and to train teleworkers and supervisors (Leo O'Farrell, personal communication, December 18th, 2012)

- Utilize selective eligibility criteria, making sure employees aren't applying to telework for the wrong reasons (such as taking care of dependents). Ensure that their home work space is quiet and free of loud pets or young children (Pamela Park, personal communication, December 21st, 2012).
- It is important for companies to create opportunities for teleworkers to interact with their non-teleworking coworkers (Swanberg, Loeffler, & Werner, 2007).
- For additional teleworker do's and don'ts, please refer to Appendix E.

Other Successes and Best Practices

- *Virtual Resource Solution (VRS), Treasury Inspector General for Tax Administration (TIGTA)* (Anonymous, 2006b) – TIGTA was one of the first federal organizations to implement a teleworking program. The pilot program VRS was implemented in 2000 and the program received the Commuter Connections Employer Recognition Award for Telework after the program had been running for three years. Results of the program have included increased job satisfaction and increased productivity. The biggest challenge was getting the management on board, but this was achieved through training programs. 97% of TIGTA's employees are eligible to telework and 92% choose to do so at least several days per week. As of 2006, the program had already reduced office space by 5%, which amounted to annual savings of \$500,000. This trend is expected to continue.
- *Tech House* (U.S. Department of Labor, 2009). – This is a small company in which most of the nine employees participate in teleworking. The company created a communication system to facilitate urgent matters. The standards include the following: If the information is not urgent, it can be sent by email and be responded to within one day. If the information is somewhat urgent, the employees use an instant messaging system. If the information is urgent, a phone call is made. Phone calls are only made for truly urgent matters. Teleworkers are only required to visit the office one time per month for a meeting.
- *Infrasafe, Inc.* (U.S. Department of Labor, 2009). – This company offers teleworking to many of its 100 employees. Those who want to telework must first request the option which is then followed up by an assessment. Those who are eligible include accountants, software engineers, and IT support employees. The company uses a remote desktop and a VoIP phone.
- *Phase Forward LLC* (U.S. Department of Labor, 2009). – This firm was designed around flexibility. It was created by Noel Adams who was interested in flexible work arrangements without sacrificing hours and to respond to the needs of working mothers. While small, the company of five has seen positive results in terms of employee and customer satisfaction.
- *Federal Railroad Administration (FRA)* (Joice, 2000) – This program was created in 1995 and was first offered to safety inspectors who were able to work from home. Since

that time, many offices have closed, and FRA has saved around \$80,000. This is a good example of an organization that has made significant savings due to teleworking.

- *The Department of Education (DOE)* (Joice, 2000) – After being faced with a budget crisis, the DOE initiated a teleworking program in 1996 which allowed workers to work from hotels or home. This decreased the costs related to the traditional office space. As a result of the program, the DOE saved twenty-four jobs.
- *The Department of Commerce (DOC)* (Government Accountability Office, 2005)- At DOC, those who were required to handle classified information were not able to telework. As of 2005, the DOC was implementing a system to track teleworkers. The DOC currently counts the number of eligible employees and requires that they be trained before beginning the program. If the eligible employees are meeting expectations, they will not be excluded for the teleworking opportunity.
- *The Department of Justice (DOJ)* (Government Accountability Office, 2005) – At DOJ, those who were required to handle classified information were not able to telework. DOJ requires that all eligible teleworkers be trained before beginning the program. As of 2005, the DOJ was implementing a system to track teleworkers. At the DOJ, 54% of employees were eligible to telework, with 18% of those eligible actually teleworking. Some of the eligibility criteria for DOJ teleworkers included not being responsible for classified information, having the right IT components, not being in an entry-level position, etc. Additionally, correctional officers and receptionists were not eligible. Eligible employees must be shown to be able to work independently and have a good history with the DOJ. As of 2005, supervisors were expected to manually track the number of teleworkers.
- *The Department of State (State)* (Government Accountability Office, 2005)- At State, those who were required to handle classified information were not able to telework. Only 7% of employees at State were eligible to telework. Of those 7%, 82% participated in the program. State has the capabilities of counting eligible employees, but as of 2005 they did not have the capabilities to count those actually participating.
- *The Small Business Administration (SBA)* (Government Accountability Office, 2005) – All positions at this level were eligible to telework. SBA requires that eligible teleworkers be trained before starting the program. As of 2005, 18% were eligible to telework. If the employees are required to work in a face-to-face environment, they would not be eligible to telework. As of 2005, the SBA had a way to track who was eligible to participate, but not who was actually participating in the teleworking arrangement.
- *The Securities and Exchange Commission (SEC)* (Government Accountability Office, 2005)- All positions at this level were eligible to telework. 100% of the SEC's employees are eligible to telework, although some may be excluded if the nature of their work requires face-to-face interaction. As of 2005, the commission was working towards training managers and supervisors in order to reduce resistance to teleworking. If the employees had signed a teleworking agreement, the SEC had a way to track them.

However, if not, the SEC did not have a way to count how many employees were actually participating.

- *The Consumer Product Safety Commission* (Joice, 2000) – The CPSC created its teleworking program as a pilot program in 1995. Since then, the number of teleworkers has grown, with 95 of the 130 employees teleworking. This program has saved the CPSC almost three million dollars in office rent savings.
- *Eastman Kodak* (Litchfield, Swanberg, & Sigworth, 2004)- Company offers job sharing, compressed work week, part-time work options, flex time, and teleworking. The program was implemented in 1997, and eligible teleworkers are selected based on an application, permission from the manager, and proof that the change will not have a negative impact on performance. The option to telework is available to all employees. Employees are able to design their own schedules, and the arrangement has led to increase productivity. The company has a detailed guidebook and a specific flexible work time agreement form. The company has also developed training modules to train managers and employees on flexible work time issues. Plans for implementing tracking and monitoring tools are in place.
- *Wachovia Corporation* (Litchfield, Swanberg, & Sigworth, 2004)- The company began to offer teleworking in 1996 to address concerns regarding recruitment, retention, and turnover. Eligibility is based on supervisor approval, acceptable work performance, and a clean disciplinary past. The company reported that it was easier to recruit potential employees after implementing the program and that employees are more satisfied due to the ability to coordinate their work schedules with their personal lives. The company is currently working on a tracking and monitoring strategy for its teleworkers. The company has found that workers reported less stress and are better able to manage their work and home life.
- *Kentucky Orthopedic Rehab Team* (Swanberg, Loeffler, Werner, 2007) – The company offers teleworking as an option in addition to other flexible work arrangements. The employees who telework are the marketing employees who are able to complete their work by phone and computer. All necessary technological equipment is provided by the company. The teleworkers attend monthly meetings to be sure they are involved and able to share their opinions with the team. The company has saved money due to decreased rent costs for teleworkers.
- *Best Buy, Inc* (Moen, Kelly, & Hill, 2011) – This company is a large retail company which implemented a teleworking policy called the Results Only Work Environment (ROWE) initiative. Before implementing the program, employees and managers participated in a series of discussions and trainings. ROWE is unique in that it takes into consideration employees gender and stage of life/parenthood on the effect of turnover. In a study conducted on the ROWE program, it was found that teleworkers had significantly lower turnover rates than those not teleworking.

- *New England Region General Services Administration Telework Program* (Joice, 2000).
 - The company began its telework program due to heavy traffic and congestion in the area. They planned to have 23% of eligible employees teleworking at least a few days per month. All employees were offered the option, regardless of position. The company also created a Telework Committee which was in charge of assessing eligibility. The teleworkers were provided with cell phones, laptops, and other necessary technological equipment.

References

- Aarts, D. (2011). Telework essentials. *Profit*, 30(2), 30.
- A Guide to Telework in the Federal Government, OPM-VI-I.
- Anderson, R. (2004). The child welfare workforce gets wired. *Children's Voice*, 13(1), 32-33.
- Anonymous. (2006)a. "Telework" evolves. *Area Development Site and Facility Planning*, 41(2), 10.
- Anonymous. (2006)b. Tigta: A case for teleworking. *Federal Computer Week*, 20(14), S10.
- Bailey, D., & Kurland, N. (2002). A review of telework research: Findings, new directions, and lessons for the study of modern work. *Journal of Organizational Behavior*, 23(4), 383-400.
- Baffour, G., & Betsey, C. (2000). Human resources management and development in the telework environment. *Telework and the new workplace of the 21st century*. Washington: Department of Labor.
- Baruch, Y., & Smith, I. (2002). The legal aspects of teleworking. *Human Resource Management Journal*, 12(3), 61-75.
- Dutrow, K. L. (2001). Working at Home at Your Own Risk: Employer Liability for Teleworkers under the Occupational Safety and Health Act of 1970. *Ga. St. UL Rev.*, 18, 955.
- General Services Administration. (2006)a. Telework Technology Cost Study. Retrieved from www.gsa.gov/graphics/ogp/ExecutiveSummarywAltTags_508.doc on January 31st, 2013.
- General Services Administration. (2006)b. Is standard practice best practice? Emerging perspective on telework and dependent care. Retrieved from www.gsa.gov/graphics/.../teleworkdepcarefinalfullwebversionreport... On January 31st, 2013
- Government Accountability Office. (2005). GAO-05-1055R Agency Telework Methodologies. Retrieved from www.gao.gov/new.items/d051055r.pdf on January 31st, 2013.
- Hopkinson, P., James, P., & Maruyama, T. (2002): Teleworking at BT. The Economic, Environmental and Social Impacts of its Workabout Scheme. Report on Survey Results
- In House Report No. 1722, 111th Cong., 2nd sess. (2010). The Telework Enhancement Act of 2010. Retrieved from <http://www.gpo.gov/fdsys/pkg/BILLS111hr1722enr/pdf/BILLS-111hr1722enr.pdf> on January 31st, 2013.

- JALA International. (2007). Jack Nilles. Retrieved from <http://www.jala.com/jnmbio.php> on February 11th, 2013.
- Joice, W. (2000). Federal telework topics. U.S. General Services Administration.
- Kitou, E., & Horvath, A. (2008). External air pollution costs of telework. *The International Journal of Life Cycle Assessment*, 13(2), 155-165.
- Kreitner, R., & Kinicki, A. (2007). *Organizational behavior*. McGraw-Hill/Irwin.
- Kumari, D., & Raina, D. (1998). Energy conservation using telepointer. Retrieved from www.ipcsit.com on February 11th, 2013.
- Lister, K. Workshifting Benefits: The Bottom Line (San Diego, CA: Telework Research Network, May 2010).
- Lister, K., & Harnish, T. (2011). The state of telework in the us: How individuals business, and government benefit. *Telework Research Network*.
- Litchfield, L. C., Swanberg, J. E., & Sigworth, C. M. (2004). *Increasing the Visibility of the Invisible Workforce: Model Programs and Policies for Hourly and Lower Wage Employees: Final Report*. Boston College Center for Work & Family, Carroll School of Management.
- Mahler, J. (2012). The Telework Divide: Managerial and Personnel Challenges of Telework. *Review of Public Personnel Administration*.
- Moen, P., Kelly, E. L., & Hill, R. (2011). Does enhancing work-time control and flexibility reduce turnover? A naturally occurring experiment. *Social problems*, 58(1), 69.
- Office of Workplace Programs. (2012). Los Angeles County Telework Program. Retrieved from ceo.lacounty.gov/wpp/rideshare.htm on January 31st, 2013.
- Ruth, S., & Chaudhry, I. (2008). Telework: A productivity paradox?. *Internet Computing, IEEE*, 12(6), 87-90.
- Salamoff, S. (2002). Satellites improve telework connections. *Canadian HR Reporter*, 15(10), 6.
- Scarfone, K., Hoffman, P., & Souppaya, M. (2009). Guide to Enterprise Telework and Remote Access Security. *NIST Special Publication*, 800, 46.
- Swanberg J., Loeffler, D., & Werner, M. (2007). Making workplaces work: Employer best practices in kentucky. Institute for Workplace Intervention, University of Kentucky.
- Telework.gov*. (2011). Retrieved from <http://www.telework.gov/>

Telework Toolkit. (2013). Retrieved from <http://www.teleworktoolkit.com/>

Telework Trendlines 2009. (2009). A Survey Brief by World at Work. Retrieved from www.worldatwork.org/waw/adimLink?id=31115 on January 31st, 2013.

U.S. Department of Labor, Women's Bureau. (2009). Flex-options guide: Creating 21st century workplace flexibility. Retrieved from www.flexoptions.org on January 31st, 2013.

U.S. Office of Personnel Management. (2011). Guide to telework in the federal government. Retrieved from www.telework.gov/guidance.../U.S. Office of Personnel Management, 2011/U.S. Office of Personnel Management, 2011.pdf on January 31st, 2013.

U.S. Office of Personnel Management. (2012). Status of telework in the federal government. Retrieved from www.telework.gov/Reports_and_Studies/.../2012teleworkreport.pdf on January 31st, 2013.

WFD Consulting. (2005). A corporate voices for working families report: WFD Consulting: An imperative for expansion. Retrieved from www.cvworkingfamilies.org/.../BizImpactFlex_March11_draftB.pdf on January 31st, 2013.

World at Work. (2007). Attraction and Retention: The Impact and Prevalence of Work-Life and Benefit Programs, 1-6. Retrieved from www.worldatwork.org

Zbar, J.D. (2001). Telework lowers office expense. *Home Office Computing* 19(1), 18.

Appendix A
Programs Referenced in this Report

- Benefits CalWIN San Francisco
- Best Buy Co. Inc
- Cecil County's Social Worker Palm Pilot Program- Nick Ricciuti (410) 996-0100
- Commonwealth of Virginia
- Department of Commerce (DOC)
- Department of Defense (DOD) Demonstration Program
- Department of Justice (DOJ)
- Department of State (State)
- DOD's Computer/Electronic Accommodations Program (CAP)
- Eastman Kodak- Tasia McCullough-Johnson (585) 724-0761
- Federal Railroad Administration (FRA)
- General Services Administration New England Region General Services Administration
- Harris County's Child Protection Services Pilot Program (DASH) - Dephine Baldon (713) 767-2703.
- Kentucky Orthopedic Rehab Team
- Oregon Department of Transportation, Department of Energy Pilot Program
- Rady's Outpatient--School Based
- San Diego CRF Downtown Impact
- San Diego Regional Center
- San Francisco CalFRESH Pilot Program - Leo O'Farrell at Leo.O'Farrell@sfgov.org
- State of Georgia
- The Securities and Exchange Commission (SEC)
- The Small Business Administration (SBA)
- Treasury Inspector General for Tax Administration (TIGTA) Pilot Program
- Utah Department of Human Services - Pamela Park (801) 538-4496
- Wachovia Corporation - Ingrid Shelton (704) 383-1610.

Appendix B
Teleworking Policy Examples- Workers' Compensation

City and County of San Francisco
Workers' Compensation and other Liabilities

48. Employees who are directly engaged in performing the duties of their jobs are covered by workers' compensation laws, regardless of whether the work is performed on City premises or at an alternative worksite. The telecommuting employee is required to designate one area in his or her home as the official work site. The City's potential exposure to liability, including workers' compensation liability, is restricted to this official home work site for purposes of telecommuting. The City's potential exposure to liability, including workers' compensation liability, is further restricted to the designated work hours specified in the Telecommuting Agreement. If an employee suffers a work-related injury or illness while telecommuting, the employee must notify his or her supervisor immediately of the injury or illness, and complete any required forms as directed by the supervisor.

49. The City is not liable for damages to an employee's personal or real property while the employee is working at his or her home. The City is also not liable for any injuries or claims by third parties or family members in the employee's home. Rather, the telecommuting employee is responsible and liable for any damages to the employee's personal or real property while telecommuting, and for any injuries or claims by third parties or family members in the employee's home.

(City and County of San Francisco Dept. of Human *Telecommuting Program Guidelines & Participation Packet*
(<http://www.sfdhr.org/Modules/ShowDocument.aspx?documentid=1600>), p. 16).

Utah

J. Employees participating in telecommuting retain the same rights and benefits while working at their secondary work site as other Department and State employees. These rights and benefits include defense and indemnification for claims against an employee that may result from State employment as identified in the Utah Government Immunity Act and worker's compensation benefits. However, the State and Department are not liable for any injuries to a person other than the employee at an employee's home office. Department clients should not be seen at any home offices.

(Utah's HHS teleworking policy, p. 2 Utah Department of Human Services - Pamela Park (801) 538-4496)

Appendix C
Example of Telework Agreement

*County of Los Angeles
Teleworker's Agreement*

Telework is working at a location other than a conventional office. This can be either at a home or another location which is less than fifty percent of the normal commute from home to work. Telework is an option that management may choose to make available to qualified employees when a mutually beneficial situation exists. It is **not** a universal employee benefit.

Telework is an alternate work method which may meet the needs of the County's regional clean air and traffic mitigation goals as mandated by the South Coast Air Quality Management District Rule 2202. However, employees do not have a "right" to telework and this work option may be terminated by either the employee or the County at any time.

The following conditions for telework must be agreed to by the teleworker and the department (employee's supervisor):

1. The employee agrees to work at the following location:

(Home or alternate work address)

2. The employee will telework day(s) a week, or days a month.

3. The employee's work hours will be as follows:

Day: _____ From: _____ To: _____

4. The employee agrees to complete assignments to be worked on at home or an alternate location by the agreed upon delivery dates. The telemanager (supervisor) will provide the employee with all work assignments.

5. Equipment to be used by the employee at the telework worksite will be agreed to by both the telemanager and the employee.

The following equipment is needed to complete work assignments:

-
6. The telemanager and employee agree to the following arrangement regarding business telephone calls, use of cell phone, use of pager and use of a fax machine:
-

7. The employee agrees to call the central office to retrieve work related messages at least times per telework day.

8. The employee agrees to "check out" all supplies needed for the work assignments by contacting the appropriate office staff. Out of pocket expenses for supplies regularly available at the County office will not normally be reimbursed, unless approved by the telemanager in advance.

Additional conditions agreed upon by the County (telemanager or supervisor) and the employee

are as follows: _____

TELEWORK STANDARDS

When a Telework assignment is agreed upon, the following standards apply:

1. Telework is entirely voluntary and may be terminated by the employee or the County at any time.
2. The duties, obligations, responsibilities and conditions of a teleworker's employment with the County are unchanged. Employee's salary, retirement, benefits and County-sponsored insurance coverage are unchanged.
3. Teleworkers and their managers are required to be certified at a County Telework Program (CTP) orientation and training, and a department-specific training before Telework begins. Every two years thereafter, teleworkers and telemanagers must attend a departmental refresher training course to ensure compliance with CTP requirements and standards.
4. All records, including training, must be kept for a minimum of three years. The certified Employee Transportation Coordinator (ETC) within each department will be responsible for all record keeping associated with Telework.
5. Work hours, overtime compensation and vacation schedule must conform to the County Code, to MOU provisions and to terms otherwise agreed upon by employee and the supervisor.
6. The use of equipment, software, data supplies and furniture, when provided by the County for use at the offsite work location, is limited to authorized persons and for purposes relating to County business only.
7. Employees should designate a work space for installation of equipment to be used in the project. This work space should be maintained in a safe condition, free from hazards and other dangers to employee and equipment.
8. Since the offsite work location shall be considered an extension of the County work space, the County's workers compensation liability for job related accidents will continue to exist during the employee's telework hours.
9. In the event of delay in repair or replacement of equipment or any other circumstances under which it would be impossible for the employee to telework, the employee's department may assign other work or request that they employee move to another location.
10. When County equipment is provided to the employee, the employee is responsible for seeing that the equipment is properly used. The County will provide for repairs to County equipment.
11. When the employee uses their own equipment, the employee is responsible for maintenance

and repair of equipment.

12. The employee remains liable for injuries to third persons or members of employee's family on employee's premises.

13. Requests to work overtime, use sick leave, vacation or other leave must first be approved by the employee's supervisor in the same manner as when working in the regular office.

14. If a teleworker is sick while working at home, the teleworker is required to report the hours worked, and must use sick leave or other accrued time to cover the hours not worked.

15. Employees who telework are required to participate in all studies, inquiries, reports or analysis relating to the CTP. The data collected may be made available to the general public without identification of employees.

16. Employees remain obligated to comply with all County rules, policies, practices and instructions. Violations of these rules, policies, etc. may result in preclusion from Telework or disciplinary action, up to and including termination of employment.

17. Individual tax implications related to the home work space shall be the responsibility of the teleworker. Employees are advised to consult a tax expert.

18. With reasonable notice, the County may make onsite visits to the employee's offsite work location to determine if the place is safe, to ensure there are no hazards, and to maintain, inspect, repair or retrieve County-owned equipment, software, data or supplies.

19. As a Telework employee, I have reviewed the conditions of this Teleworker Agreement, Telework Procedures, and the Telework Standards with my telemanager (supervisor) and agree to the conditions.

Employee Department Date

County Office Address Telework (Home) Address

County Telephone Number Telework (Home) Telephone Number

Telemanager

Appendix D
San Francisco HSA Remote Access User Guidelines

The City and County of San Francisco Dept. of Human Resources has published a *Telecommuting Program Guidelines & Participation Packet* (<http://www.sfdhr.org/Modules/ShowDocument.aspx?documentid=1600>). This document (hereafter called "DHR's *Telecommuting Packet*") includes requirements, conditions, guidelines, and agreements for all City employees who will be formally working remotely. The following *SF HSA Remote Access User Guidelines* are intended to supplement DHR's Telecommuting Packet, not to supersede it.

SF HSA Remote Access User Guidelines

Introduction

HSA IT provides remote access to most of the information systems it operates, to allow authorized users to use the systems from locations other than HSA offices. This document outlines the responsibilities of all HSA remote users, whether they will be accessing systems on an ad-hoc basis or as part of a formal telecommuting program.

Remote Access Requirements

Permission

Before you begin working remotely, you should have permission from your management. You should have an understanding of what kind of work you will be performing remotely, why remote working is desirable or necessary, where and when you will be working remotely, and what limitations you may encounter. For an introduction to these, see the "Anticipate Differences" section at the end of this document. DHR's *Telecommuting Packet* reviews the conditions and requirements of telecommuting in substantial detail.

Connection

Remote access to HSA information systems requires an Internet connection. For acceptable performance in almost all applications you will need to have at least a high-speed broadband connection. HSA no longer provides nor supports dial-up modem connections. HSA will not provide nor compensate you for an Internet connection. Your broadband connection must be accessible without installation of extraneous software or hardware onto the computer using the connection. Due to the wide range of possible configurations, HSA IT has limited ability to help you connect a computer – even an HSA computer – to your Internet provider's network. If you have problems establishing a connection to the Internet, you will probably have to consult your Internet provider's technical support group.

Approved Workstation

HSA only permits connections to its information systems from approved workstation computers. In almost all cases, this means you must be using an HSA-provided laptop or desktop computer. Personal computers are not permitted to connect to the HSA network and HSA applications because HSA IT cannot validate or correct the security of personal computers. If you will be working remotely and do not already have an HSA laptop assigned to you, your manager may request a computer using the IT Request process. Please be sure to indicate the expected duration of the assignment.

Note that this restriction applies equally to connections to HSA applications and data accessible over the Internet without the use of a VPN, including those operated under contract or agreement by an outside partner. Examples include CalWIN Web, AACTS, Panoramic VetPro, and the BenefitsCalWIN County Worker application.

Remote Access Account

Once you have an approved computer and access to the Internet, you will need to log in to a remote access system. This is not a standard-issue account, so you'll need to request an account via the IT Request process. Access to most HSA information systems requires a **City VPN account**. Certain programs have other forms of remote access (e.g. CWS/CMS remote access for FCS workers) that may have other account request procedures

Remote Access Responsibilities

As a remote access user, you have certain responsibilities beyond those of a regular user of HSA information systems.

Acceptable Use

When connecting to HSA information systems from a remote site, you are still bound by the terms of use described in the *HSA Information Systems Acceptable Use Policy*. This policy can be found on the HSA Intranet as section 9-2.14 of the *Personnel Procedures Handbook*, which is in the **HSA à Human Resources** section of the Intranet. At a very broad level, this means:

- Only use HSA information systems (including workstations, data, and remote access accounts) for HSA business purposes. Don't use them in any way that may put the systems or data at risk.
- Do not allow unauthorized individuals use of HSA information systems.
- Your use of HSA information systems may be monitored for security and maintenance purposes.

A complete explanation and further details can be found in the above-referenced Acceptable Use Policy document.

Protect the Data

A laptop computer can be a mobile treasure trove of confidential data. Identity theft is a growing criminal business, and typical HSA spreadsheets and databases contain client confidential information. Here are some steps you can take to protect the data entrusted to us.

- **Minimize the data stored on remote/mobile systems.** Avoid saving files on the computer's local disk (C: drive). Instead, save files on network drives (N:, O:, and U:).
- **Protect the data that is on the computer.** It's inevitable that some confidential information will be retained on remote/mobile computers. HSA IT should have installed full disk encryption software on your workstation, requiring a passphrase at power-on to access the system. If not, contact IT immediately to have it installed. Protect the encryption passphrase – don't keep it in written form anywhere where it could be found by someone who also has access to the computer itself.
- **Protect data being sent back and forth across the Internet.** Your access to HSA systems should be encrypted via a VPN (Virtual Private Network). However, any communications

through non-HSA services (such as Internet email or file-sharing services) are not protected and should not be used for exchanging confidential information.

- **Back up your files.** Mobile computers are at particular risk for loss, theft, and damage, and are not backed up by any automated systems. Keep backups of any files and data on a network drive (N:, O:, or U:) to protect against loss in case something happens to the workstation.

- **Avoid carrying hard copies.** Paper documents can't be encrypted, and can be lost just as easily as a laptop. Avoid working remotely on assignments that require you to carry or handle confidential paper documents.

Protect the Mobile Workstation

Office workstations enjoy a host of defenses that are not as easy to provide to mobile workstations. In order to protect your workstation, follow these guidelines:

- **Keep the equipment physically secure.** Keep it on your person whenever you're not at home or in the office. Don't leave it unattended in vehicles or public places. Whenever possible, use a cable lock or similar protection while using it in a public place, to protect from snatch-and-run attacks; however, cable locks are not secure enough to protect an unattended computer from theft.

- **Bring laptops into the office regularly.** System, software, antivirus, and other updates are distributed over the network and may not be able to be pushed to remote computers connecting over a VPN. At least once a month, you should bring your laptop to the office, connect it to the office network, log in to Windows, and leave the computer connected for 30-60 minutes so that it can receive all needed updates.

Anticipate Differences

Using a mobile and remote workstation is not the same as using a desktop workstation in the office. Be prepared for some differences in your work experience. In general, one important habit will serve you well: Test your ability to perform important computer-based functions remotely, well *before* you *need* to use them. HSA IT is dedicated to providing the best remote access experience possible, within the limits imposed by technical and security considerations. It is up to you and your management to determine if you will be able to work effectively and efficiently in a remote access environment.

- **Irregular use affects workstation performance.** If you are assigned a laptop but only use it occasionally, you will almost certainly find that system performance is poor compared with your office desktop. This is because your office computer performs some automated maintenance tasks (e.g. virus scans) regularly, often when you're not using the computer. Your laptop tries to do these same tasks, but it can't do them when it's powered off. So it waits until you power it on to do them. This may mean that the first hour or more that you turn on the laptop, a lot of its system resources are consumed in these maintenance procedures. To reduce the impact, power on and log in to your laptop and the HSA network regularly – or plan to let it do maintenance tasks for a while before you start using it for work.

- **Remote access is slower than the office network.** No matter how you slice it, an encrypted VPN connection on a broadband network is going to be slower than working in the office. Not only are the connections slower all around, you are also competing with users across the City government for the Internet connection – the same one they use to surf the Web is the one you

use to connect *in* to the HSA network. Don't plan to do remotely access applications or large files that require a lot of bandwidth. Make temporary local copies of document onto the laptop's C: drive (e.g. to your "My Documents" folder), then copy them back up to a network drive and delete them from the C: drive when you're done.

· **Remote access to HSA information systems is restricted.** You may find that you are unable to remotely connect to some systems that you're accustomed to accessing from your office workstation. To help protect the network, VPN access is provided on an "exception" basis – that it, you can access *nothing except* what is permitted. HSA IT strives to ensure that production applications are available over remote access, but some systems – particularly newly established ones – may slip through the cracks. If you find you can access most HSA systems remotely, but there is one that just won't work, contact the IT Help Desk to see if remote access is available for that system. Your office workstation computer will never be accessible remotely. This is a good reason to store your business files on network drives (N:, O:, and U:). Also be sure to check that any installed software you regularly use is loaded onto your remote workstation, or that you have a mobile alternative (e.g. iNotes for email and calendar, or Citrix access to CalWIN).

· **HSA IT may have limited ability to help you remotely.** Except for designated "outstation" work sites, HSA IT Field Support technicians will only visit HSA offices. They will not visit your home to help you with computer or connectivity problems. Be prepared to bring in your workstation computer if it has problems, and/or to spend a fair amount of time troubleshooting over the telephone.

Further Information

For further information about remote access to HSA Information Systems, direct inquiries to the HSA IT Service Desk at DHS HelpDesk/DHS/CCSF, or 557-5888. If Service Desk technicians are not able to answer your question directly, they will ensure that your question is referred to someone who can. To initiate a request for a City VPN remote access account, submit an IT Request. Be sure to include the name of the employee requesting remote access, and any special system access required.

Appendix E
Teleworker Do's and Don't's

Do's

Have a separate work space at home
Stick to the same work schedule
Take breaks throughout the day
Keep your work organized
Keep your boss informed of the progress you are making
Attend department and group meetings, if possible
Stick to all deadlines
Call the office and keep in touch
Maintain or increase your level of performance
Inform family members and neighbors about when you may be interrupted
If telework is not suitable for you, talk to your supervisor or manager

Don't

Don't develop bad habits at home
Don't let the radio or television distract you
Don't start sleeping late on telework days
Don't stay in your bed clothes all day
Don't change your work schedule every time that you telework
Don't run errands for everybody in the neighborhood just because you are home
Don't telework if you have an infant or an elderly person who requires your attention
Don't give telework a bad name
Don't stay in the telework program if it is not working for you

(Office of Workplace Programs, 2012, p. 2)

Appendix F
Experts in the Field

Darryl Anderson- Telework Coordinator, Minnesota Department of Transportation, helping develop telework as a non-travel mode. (651) 366 4162 <http://www.dot.state.mn.us/>

Mary J. Bray- Director, Hagerstown Telework Center, Member of the International Telework Association and Council Public Policy Committee, MidAtlantic Telework Association officer for 4 years, member of Commuter Connections Telecommuting Ad Hoc Group, and member of the Work/Family Committee of the Hagerstown-Washington County Chamber of Commerce. (301) 745-5600 <http://www.hagerstownmd.org/>

Eddie Caine-Tmanage, Inc., has been a telecommuter since 1984 and has promoted, researched, taught, advised and consulted on the subject since 1990. 512.794.6000

Carolyn Davis Cockey- Executive Editor, Association of Women's Health, Obstetric & Neonatal Nurses Washington, D.C., full-time telecommuter (Fort Wayne, Indiana to Washington DC) remotely directs the operations of two of this international organization's largest publications. <http://www.awhonn.org/awhonn/> 202-261-2400

John Corbett-Telework Programs Administrator, The Arizona Department of Administration, has 12 years' experience in designing, implementing, researching and expanding telework programs; writing and producing telework program implementation materials; conducting regional telework initiatives; consulting with major employers, and training telework coordinators. www.TeleworkArizona.com (602) 542-7433

Elizabeth Daly- former Telework Program Coordinator, US Department of Agriculture. <http://www.usda.gov/wps/portal/usda/usdahome>

Michael Dziak- President of IntelWorks, Inc., consultant, speaker, trainer and author who since 1991 has been helping clients maximize their business potential through telework. <http://www.e-work.com/> (866) 362-1112

David Fleming- Fleming LTD: Telework, Telecommute consulting since 1985, innovating telework programs in government, including telecenters: www.mother.com/dfleming/

Bob Fortier- President of InnoVisions Canada, President of the Canadian Telework Association, and member, ITAC Board of Directors. www.ivc.ca

John F. Frank- Managing Principal, NISYS, Inc. One of the primary architects and project manager of IBM's implementation of telework ("mobile office"), a 9-state initiative which became the standard for a national implementation for more than 20,000 employees, at a cost savings of over \$60 million in the first 3 years; as a consultant/managing partner, Mr. Frank advised other major corporations in the implementation of telework. <http://www.ibm.com/us/en/>

Cynthia C. Froggatt- Principal of Froggatt Consulting (New York, NY) and author of “Work Naked: Eight Essential Principles for Peak Performance in the Virtual Workplace”
http://www.froggattgottwaldconsulting.com/about_fgc.php

John Girard- Vice President & Research Director, Gartner, Inc., conducts research and advises clients on management techniques and technology planning & choices for telecommuters and road warriors. <http://www.gartner.com/technology/home.jsp>

Nicole Belson Goluboff, Esq.- author of “Telecommuting for Lawyers” and of a forthcoming book on the legal implications of telework to be published by the American Law Institute.
<http://www.telcoa.org/about-us/advisory-board/nicole-belson-goluboff-esq/>

Gil Gordon- Gil Gordon Associates, telecommuting/telework consulting and publishing for end-user employers and vendors since 1982, and widely considered one of the world’s top telework experts. <http://www.gilgordon.com/gga/index.htm>

Gail Guest- Telework Program Coordinator, US Department of Labor, a model employer which has made telework programs available to its employees since 1993 and encourages managers to view telework as a means of recruiting and retaining the best workers. <http://www.dol.gov/>

Noel Hodson- founded SW2000 Teleworking Studies (1988), which co-led the EC projects Experts Unlimited and The European Charter for Telework, advising major employers on, and devising management tools for, business in the Information Society; also wrote the seminal Economics of Telework in 1992 and the book Teleworking Explained in 1993.
<http://www.noelhodson.com>

Deborah Holden- Employee Development Specialist and Federal Aviation Administration Telecommuting Manager at Washington Headquarters since 1997. <http://www.faa.gov/>

G. Alan Hunter- Assistant Executive Officer, California Franchise Tax Board, has been the senior executive “Champion” of telework at the Franchise Tax Board for more than a decade.
<https://www.ftb.ca.gov/index.shtml?disabled=true>

Ronald P. Hutchinson- Telecordia Technologies, a telecommunications solutions company with over 1400 of its 7000 employees engaged in regular telecommuting.
http://www.ericsson.com/ourportfolio/telcordia_landingpage

Joel Kugelmass- Administrative Analyst, UC Davis Cancer Center, and author of “Telecommuting: A manager’s guide to flexible work arrangements,” has 8 years’ experience writing, consulting, and advising on telecommuting within the public sector environment.
<http://www.ucdavis.edu>

June Langhoff- author (The Telecommuter’s Advisor) and journalist, writes about the new workplace for a number of national magazines and is editor of Telecommute magazine, an e-zine for today’s flexible workplace. www.telcoa.org

Barbara Lietz- M.A., Operations Manager: Allina Metro Transcription Services, U/M, UH, ANW Hospitals, eight years managing on-site (60) and telework (30) transcriptionists; consultant providing model policy and procedures for other hospital departments moving toward telecommuting. Currently works at Meet Minneapolis <http://www.minneapolis.org/>

Glenn Lovelace- Founder and CEO, Tmanage, Inc., a company focused solely on facilitating and implementing e-workforce solutions; more than 20 years of communications industry expertise at Southwestern Bell, AT&T, Fujitsu and Nortel, where he was Director of Telecommuting, developing one of the nation's top telework programs. 512.794.6000

Billy Michael- Senior Telework Specialist, Governmentwide Telework Team, Office of Governmentwide Policy, US General Services Administration, consults on telework for Federal Government agencies, assesses Federal telework policies and pilot programs, and generally works to advance teleworking across the Federal sector. <http://www.gsa.gov/>

Janice Miholics- Vice President, Manager, Global Telework Strategies, Merrill Lynch; the firm-wide program (3500 telecommuters in disciplines ranging from technology to finance to public relations) developed in 1996, is structured around corporate principles of client Focus, integrity, respect for the individual, teamwork and responsible citizenship. <http://www.ml.com>

Bruce Murray- five years as Departmental Work/Life Programs Administrator, US Department of Energy (DOE); the Work/Life Programs includes DOE's telework program, known as DOE-Flex. <http://energy.gov/>

Jack Nilles- of JALA International, Inc., "father of teleworking," he has been involved in the design, implementation and evaluation of telework programs worldwide. <http://www.jala.com/>

Joanne Pratt- President of Joanne H. Pratt Associates, Dallas, Texas, is a futurist who helps companies implement telework for their employees, does research on new ways to work that are enabled by technology and helps vendors understand the home office. [Www.joannepratt.com](http://www.joannepratt.com)

Joseph Roitz- AT&T Telework Director, an award-winning program in which more than half of its managers telework. <http://www.att.com/>

Elham Shirazi- Consultant with expertise in program design, implementation and evaluation of employer programs and the development of regional telework resources. http://www.dol.gov/wb/media/Shirazi_bioatl.htm

Tony Smith- TManage Director of Professional Services providing end-to-end telework solutions to fortune 1000 companies, 10 years experience implementing and managing large corporate telework programs. 512.794.6000

Susan Tierney- Marketing Coordinator, Regional Public Transportation Authority which supports and promotes telework initiatives as a way to enhance ways of doing business, improve air quality, and reduce traffic congestion in the metro Phoenix area and offers special outreach

programs that include training, management briefings, and informational materials.
http://mpd.azdot.gov/transit_programs_grants/RPTA.asp

Oria H. Todd- TeleWork Program Coordinator for the Mid-Atlantic Region of the US General Services Administration since inception of the pilot program in the late 1980s.
<http://www.gsa.gov/>

Pam Tucker- TeleCommuting, Inc., a full service provider facilitating the implementation of telework programs. 410-252-5781

Fran Corcoran White- U.S. Geological Survey, has bureau-level responsibility for/expertise in policy development and implementation to include development of training for managers, supervisors and employees. <http://www.usgs.gov/>

Kathryn Wolf- Department Worklife Program Manager, U.S. Department of Justice, is the agency official (and six-year telecommuter) who manages the Department of Justice Telecommuting Program which has been in effect since 1991:
www.usdoj.gov/jmd/ps/worklife.html

Note: Copied and adapted from (General Services Administration, 2001)

Appendix G
Resources and Research Centers

- Families and Work- <http://familiesandwork.org/site/research/reports/main.html>
- Federal Telework- www.telework.gov
- FlexJobs- <http://www.flexjobs.com/> Website includes job postings and lists of companies that offer teleworking.
- Gil Gordon Associates- <http://www.gilgordon.com/gga/index.htm>
- International Telework Association & Council (ITAC)- <http://www.workingfromanywhere.org/>
- National Institute of Standards and Technology. National Recommendations for Teleworking Security- <http://www.nist.gov/itl/csd/sp800-46.cfm>
- Telework Arizona-- <http://www.teleworkarizona.com/> The state's official resource on teleworking. Includes info for employees, supervisors, coordinators, and visitors to the site. Includes program history and pilot phase information.
- Telework Exchange- www.teleworkexchange.com
- Telework Research Network- <http://www.teleworkresearchnetwork.com/> -- research center specializes in conducting independent research on teleworking. Includes links to other telework advocate agencies/research centers.
- TeleworkVA- <http://teleworkva.redmon.com/> Provides information on Virginia's teleworking incentive.
- The Institute for Workplace Innovation at the University of Kentucky- www.iwin.uky.edu
- The Telework Coalition (Telcoa)- <http://www.telcoa.org/members-only/telework-tools/telework-guidelines/>
- UC Davis Institute of Transportation Studies- http://www.its.ucdavis.edu/?page_id=11448/ research center for teleworking. Also, http://www.its.ucdavis.edu/?page_id=11628
- Work and Family Researchers Network- <https://workfamily.sas.upenn.edu/> A research foundation dedicated to researching popular issues related to work and family. Previously called Sloan Family Research
- Workplace Flexibility 2010- <http://www.workplaceflexibility2010.org/> --campaign to support development of comprehensive national policy on workplace flexibility. Is part of the Alfred P. Sloan Foundation's National Initiative on Workplace Flexibility
http://workplaceflexibility2010.org/index.php/laws_impacting_flexibility/

•World at Work- Research network that devotes one section to teleworking

http://www.worldatwork.org/waw/search/searchWorldatWork.jsp?N=0&Ntt=%22telecommuting%22OR%22telework%22&Ntk=General&Ntx=mode+matchboolean&spc=telecommuting&incSplshJs=y&Ns=P_SortDate|1