The Villalba Broadband Initiative (VBI) will provide a broadband infrastructure to the Villalba municipality, making broadband accessible and affordable to the residents of the municipality. Due to the current economic crisis, without these ARRA funds this initiative would not be possible. This initiative responds to the desire of the townships administration to avail Villalba residents of the latest technology infrastructure so that they can attain employment opportunities, educational opportunities and improve their economic situation. Many citizens have requested the municipality, to have affordable access to broadband services at their residences. The Villalba Broadband Initiative (VBI) will have a positive social impact on Villalba's residents, since it will provide broadband services to areas that are not served or are underserved by other providers. In addition, the estimated cost to the system will be nominal (just enough to cover the project sustainability) and approximately 70% lower than existing providers. Villalba, a municipality of thirty seven (37) square miles in the Commonwealth of Puerto Rico, is located in the southern central part of Puerto Rico. Per the 2000 Census, in Villalba, there is a household population of 30,000, an unemployment rate of 30.8%, 8,300 housing units and 59.6% of individuals living below poverty level. There are 14 'barrios' or communities, most of them, rural areas. In order to provide Broadband Access to both the urban and rural areas it has been determined that the most economically feasible, fast deployed, tested and available technology to provide last mile service is Wi-Fi wireless technology. The project's design is to install a backbone 'mesh' type of wireless network with 45 nodes from which one or more access points will be served. The nodes will be interconnected using MPLS connections where wireless connections are not possible. This configuration will provide more than one radio path to each node thus improving the system's reliability. It is proposed that customer premise equipment be installed in those households that are distant from an access point, or whose equipment does not provide wireless capabilities, or that will connect more than one computer to the system (through a customer supplied local area network). To further enhance the system availability and reliability, all nodes will be equipped with a battery backup. Because of cost and technical considerations, the proposed technology cannot provide 100% of coverage to the total population in the municipality. Even though the equipment needed to reach all the required territory is included in the proposal, it is estimated that 90% of the residences will have the capability of connecting to the system. Since not everyone will be interested in obtaining broadband services, or do not own or have access to computer equipment, or cannot afford to pay for the nominal monthly charges, or already may have access to similar services, it is estimated that 45% of the total population will benefit from the project during the first three years of being offered. This means that around 4,400 households will make use of the system with a potential number of customers of 8,000. The potential number of
users is estimated at 18,992. Certain conditions, such as: the economy, employment, municipal administration, etc., can change and provide either a positive or negative impact on the project so a longer range estimate would not be 100% reliable. The service will be available to all citizens who have a legal residence in Villalba. There will be no requirements other than: proof of residence in the municipality, acceptance of the terms conditions and policies regarding the use of the system and the payment of any installation and monthly charges that may apply. Anyone meeting these requirements, independent of race, creed, political affiliation, or any other conditions, will be granted access to the broadband service. Users that connect to the system will be forwarded to a Web Based Page that will request a username and a password. Registered users can enter their username and password to obtain access to the system. Once connected they will remain connected until: the user disconnects, or the user stops paying the monthly access payments or, a technical problem occurs with the connection. Unregistered users and guests can make use of a publicly available username and password to obtain access to the system for a determined time period, after which the user will be disconnected and allowed to reconnect after a determined waiting period, has elapsed. There are 550 businesses paying municipal taxes and approximately 96 anchor institutions in the municipality such as schools, community service organizations, some government agencies, etc. Businesses and anchor institutions can also make use of the broadband services. Small Businesses with requirements similar to the residential users can register as simple business users and will have the same capabilities as the standard residential users. It is estimated that approximately 176 small businesses will eventually subscribe to the system. Large businesses or institutions which desire to connect a local area network to the broadband connection can register as a medium business user. The Municipal Office for the Broadband Services (MOBS) will provide help to business users that require other services, such as: Web Hosting, email, web page creation, and similar services. The installation and monthly charges for all business users will be different from the charges for residential users. It is estimated that after build up stage, 24 anchor institutions and 26 medium or large businesses will eventually subscribe to this system. Municipal and state agencies can also register as users to the system. Agencies that have large bandwidth requirements will need to coordinate with the MOBS to analyze the connection request in order to determine if changes are required to the system's infrastructure and negotiate any improvements or changes needed. It has been determined that the MOBS will be responsible for: ' Receiving the system registration requests and verifying that the requester complies with the requirements. ' Assigning a valid usernames and passwords. ' Making the changes to the database to allow access to the system ' Determining if a transmitter/receiver is required, and coordinating with the installer/contractor to have the installation made. ' Providing help on the system use. ' Monitoring the system's performance and condition. ' Preparing the required corrective maintenance service orders. ' Monitoring the preventive maintenance program. ' Monitoring the system usage and disconnecting any user that violates the agreed terms and conditions or usage policies. ' Preparing monthly invoices and applying changes to the user's database. The total budget for providing and installing the system is $3,073,500.00. It has been estimated that the system operation and management will require the following positions: One supervisor/manager, one office clerk and three technicians. The annual operating costs estimated are $317,240.00. The municipality of Villalba will provide the office space, utilities, labor and other operating costs for the MOBS operation.