



MOBOTIX

CASE STUDY

South Florida Water Management District



On The Waterfront

Tourists from throughout the world travel to the south of Florida to enjoy the broad, sandy beaches along the coasts of the Atlantic Ocean and the Gulf of Mexico. But further inland, there is also a lot to appreciate, including a

very unique range of flora and fauna. The rich supply of surface water in the many lakes, rivers, canals and swamplands is crucial to the fertility and biological diversity of this region. The largest of the swamplands is, of course, the Everglades National Park, which covers an area of approximately 2300 square miles.

The First Canals

At the beginning of the 20th century, most of the south of Florida was still covered by swampland. As the cities began to expand, the swamps were drained to provide more land for agricultural use. This created an extensive network of canals and plumbing systems to supply drinking water and to irrigate the fields.

Central Administration And Coordination

Because of its subtropical climate, this region is plagued by hurricanes, floods and prolonged periods of drought, which places special demands on the management, coordination and protection of water resources. In an effort to manage these problems, the first water management authority was set up at the end of the 1940s. Today, the South Florida Water Management District (SFWMD) is responsible for the South Florida area. The District's mission is to manage and protect the water resources of the region by balancing and improving water quality, flood control, water supply and the protection of natural ecosystems. With a jurisdiction that accounts for about 40 percent of Florida's land, the district encompasses the second largest freshwater lake in the United States, Lake Okeechobee, and the world-renowned Everglades.

Security Vision Systems





The SFWMD takes care of security for canals, pump stations and flood-control structures.



A Daunting Task

Operating and managing the extensive system network is not an easy task. The District employs a workforce of 1700 for the maintenance of the systems and the supply of the inhabitants. In addition to its headquarters in West Palm Beach, the SFWMD operates another seven offices and field stations throughout the region to provide work space for very specific activities and specialized staff. Among other things, these technicians monitor and service 50 pump stations and more than 200 flood-control structures as well as a network of canals and levees more than 1850 miles in length.

Safety First

Even before the terrorist attacks on September 11, 2001, the SFWMD was always very concerned about the safety of its systems. In the 1990s, Security Manager Ed Muldowney and District Security Specialist Carl Shumate gradually built up the District's security program. This involved the installation of the first surveillance cameras in the headquarters, to which a total of 70 analog cameras were added outdoors at the field stations just a few years ago. Thanks to the use of multiplexers, it was also possible to transmit the analog camera images via the data network. But soon the large data volumes began to overload the network, a problem that can be easily solved with the use of modern MOBOTIX network cameras.

New Requirements

The events of September 11, 2001 have changed the security requirements for many American organizations, especially those that serve basic public and community needs. For the SFWMD, this meant that security measures to prevent water contamination became top priority, while continuing to address conventional threats such as theft and vandalism. To meet these challenges, the District developed an integrated security concept including the installation of a modern access control system along with innovative MOBOTIX network cameras.

Although the existing video surveillance system transmitted images via the data network to the monitors in the SFWMD headquarters control center, the older analog cameras were not flexible enough in their application and the system could not be expanded as desired. Consequently, Security Specialist Carl Shumate decided to migrate to the new generation of network cameras, a plan designed to produce a comprehensive network with a wide variety of applications in the field stations while reducing operating costs.

Alarm Via IP Notify

In addition to data transmission via wireless connections, the new systems will be designed to support such IP functions as image transmission to websites or sending an IP Notify alarm message. The concept has also been designed to reduce network load. Shumate found what he was looking for in MOBOTIX. „After the evaluation team, made up of myself, an industrial electrician and Vic Sheppard, the Electronics Supervisor, had studied nu-





merous product lines and various possible solutions, it was jointly decided that MOBOTIX met with all our criteria and requirements”, he says. The MOBOTIX systems support IP data transmission (IP - Internet Protocol), contain an integrated computer with a Web server and are able to store hundreds of images in the camera itself. Depending on the programming, the cameras can send images at particular intervals or event-controlled to a website or via IP Notify to previously defined addresses.

Because the older systems recorded continuously, they accumulated very large volumes of data. This caused problems with storage capacity, particularly because SFWMD requires all recordings to be retained for at least 30 days. The new network cameras reduce data volumes considerably because they only record when triggered by an event, i.e. when the camera detects any movement in the image field. At unmanned pump stations, for example, when the cameras detect movement, they record the activities within their range and transmit an alarm as well as the images to the headquarters. “That way, we don’t have to look at 20 hours of footage of an empty pump station, but if someone is working there for an hour, then we’ll have that on tape,” comments Shumate. The cameras at manned pump stations can be programmed so that they do not activate until after regular business hours.

Heat And High Humidity

Another important criterion was the solid, integrated design of the cameras. Like all outdoor MOBOTIX camera models, the MOBOTIX MD10D-Secure dual-lens camera also fulfills the requirements of the IP65 equipment protection category. This makes it an ideal choice for the

extreme environmental conditions that prevail in the Everglades and other areas in South Florida: heavy rain, heat and high humidity. Conventional cameras with moving mechanical parts often fail to work reliably under such conditions. This was proven in a dramatic way during the recent hurricanes that hit south Florida. „We lost about 30 of our existing analog cameras to horizontal rain damage, but all MOBOTIX cameras kept on working through three hurricanes without a single loss,” enthuses Shumate.

Complete Self-Sufficiency

The pump stations to be monitored, including catchment basins and flood control structures, are frequently located in remote areas that do not always have access to the regular electricity network. Consequently, the cameras are installed in combination with solar panels and back-up batteries.

The images of the network cameras installed thus far are transmitted in encoded form and stored on hard disks as well as in the additional back-up system at the headquarters. There, the staff can monitor the information transmitted from multiple cameras on a single monitor and control and configure the systems without further special training on the central management console.

“The multiple lens configurations available on the MOBOTIX network camera, including single or dual lens, wide-angle or telephoto, day or low-light provide us with the flexibility to deploy the same basic camera type into a wide range of specific viewing requirements with varying lighting conditions,” states Carl Shumate. Now, the South Florida Water Management District is considering the installation of indoor models of the network camera in the field stations to allow them to quickly assess the situation there in the event of an alarm.





MOBOTIX Technology – Cost Savings in Every Aspect

High Resolution For Sharp Images

All MOBOTIX cameras are high-resolution cameras with integrated image storage and 960 lines (1280x960 pixels) resolution. The **stored image** thus contains 12 time more detail for creating zoomed sections of the image than regular cameras with 240 or 288 lines (CIF, 2CIF). This is why one single MOBOTIX camera with a 90° wide-angle lens is sufficient to monitor an entire room and yet provides more detailed images than traditional technology. The MOBOTIX Day/Night cameras feature zero maintenance with one color and one B/W image sensor.

Intelligent Storage Technology Uses Fewer DVRs

The new, decentralized storage technology pioneered by MOBOTIX reduces the number of recorders that store the smooth high-resolution video by up to 90%. 40 cameras store smooth video streams including audio on a single PC, each managing its own ring buffer and database. Intelligent search features provide swift access to the stored events. There is no software required for storing and managing video, eliminating license fees and the need for expensive software. Event-controlled recording and automatic increase of frame rates upon detecting movements drastically reduce the storage requirements.

Low Power Consumption Means Enormous Savings

Since MOBOTIX cameras are anti-fogging, do not require heating and only use 3 Watts each, power can be injected into the network cabling using standard PoE products, year round. This drastically reduces the amount of cables and the power requirements for backup power.

Integrated Telephone Features

All MOBOTIX IT and Secure models feature bidirectional audio support. The built-in microphone and loudspeaker are used for live audio transmissions and storage purposes. Voice messages with PIN confirmation and call forwarding via IP or ISDN telephony have been integrated as well. Using the switch outputs, you can switch lights or open doors from the phone or from the computer.

Robust and Well-Protected

The fiberglass-reinforced housing is shockproof and the SecureFlex mount protects the network cabling as it completely conceals the cables (M12/D12 models). Weatherproof (IP65) from -30° to +60°C (-22° to +140°F).

High Return on Investment

Since the number of cameras and storage capacity are freely scalable and any kind of data connection can be used (ISDN, DSL, Ethernet, Wireless, GSM, copper, optical), MOBOTIX means high ROI, even years after installing.

State-Of-The-Art Technology

Developed and manufactured in Kaiserslautern, Germany, MOBOTIX produces image-storing weatherproof high-resolution cameras, including lens and wall/ceiling mount for as little as 598 EUR excl. VAT. To date, more than 100,000 cameras have been sold worldwide.



Download **MxViewer** alarm management software free of charge. 30 cameras with 30 fps each, layout editor, remote alert notification

MOBOTIX AG
 Security Vision Systems
 Luxemburger Straße 6
 D-67657 Kaiserslautern
 Tel.: +49 (631) 3033-103
 Fax: +49 (631) 3033-190
 E-Mail: sales@mobotix.com
 www.mobotix.com

