



# Technology Solutions

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## Michigan's Technology Solutions

### Exploring the Technology Possibilities: 2008-2012

Michigan's IT strategic planning process has consistently included an evaluation of reported research and review of new technology developments. This segment of the plan includes an assessment of a full range of current and emerging technologies feasible and appropriate for state implementation.

Our assessment has been accomplished through information gathering from a variety of sources - from thorough review of research papers by objective analysts such as Gartner, Inc. and Forrester Research, Inc., to one-on-one sessions with experts to learn their advice for Michigan-specific implementations. The findings and recommendations of this process are presented to Michigan's IT decision-makers who then work with the Michigan Information Technology Executive Council (MITEC) and other stakeholders to determine the technologies to focus on in the coming years.



### Streamlined Citizen Transaction and Self-Service

Identify and implement the latest technologies to make government services more accessible to citizens and businesses.

A key focus of this solution is the creation of a true "e-Government," where all citizens can access the government services they need quickly, efficiently and securely. This approach emphasizes single-points of access to government services through multiple channels and a continuing commitment to making existing e-government services faster and easier to use.

According to the Pew Internet and the American Life Project, 73% of American adults - and 93% of teens - are internet users; 70% of Americans connect via high-speed internet (mostly cable modem or DSL). Along with this access comes the expectation for on-demand, self-service options for doing business with state government. This expectation will only increase with the accelerating use of technology as the primary tool for social and business connection.

These new citizen demands are not just focused on online services. Self-service is increasingly commonplace in other parts of our daily lives. Whether it's using an ATM to get cash at midnight, a kiosk to check in before a flight, or paying at the pump as you fill up your gas tank, self-service is an increasingly vital way to do business.

Just like in the private sector, Michigan citizens will continue to demand that their government provide them with convenient, cost-effective and secure service around the clock.



## Opportunities for Michigan

- Better service for citizens

The desire by public agencies to provide information and services on the Internet opened a way for Americans to contact government that was not available a decade ago. The benefits include expanded information flows between governments and citizens. Citizens benefit from increased access, whether they live in the Upper Peninsula or Detroit, work 8 to 5 or the graveyard shift or they're on their home computer or a laptop at a state park.

- New cost savings

As Michigan continues to wrestle with tight budgets, streamlined citizen transaction and self-service can promote cost savings through reducing employee work hours devoted to providing certain services. E-government efficiencies can also enable the State of Michigan to better cope with its smaller workforce. For example, Michigan receives an average of 22,000 business registration applications per year, all of them on paper. The new online e-Registration for Michigan Businesses allows employers to create a single electronic document that satisfies tax registration requirements for multiple agencies, spanning six specific tax registrations (unemployment, sales, withholding, tobacco, motor fuel, single business). This not only improves services to Michigan businesses, but also frees up state employees to perform other important tasks.

## Current Status

The State of Michigan now offers a variety of self-services; whether it be from home through the Internet or on the telephone, while using a wireless device remotely or in person through a kiosk. Examples of services currently available include:

- Drivers license and vehicle registration renewals using kiosks
- Online campsite reservations
- Fishing licenses via mobile phone
- Online permitting

One of the major challenges for government is to understand how citizens use services in order to increase their use of online services. It's not enough to drive citizens online. Government must adapt its internal processes and overcome its traditional structure to allow for inter- and intra-agency collaboration.

Another challenge is that moving toward self-service requires an infrastructure that supports electronic payments. While this can bring cost-savings – both from efficiencies and per-transaction – it also means investing in solutions and processes with a high-level of security.

## Next Steps

There are many opportunities to expand citizen access to state government services in various stages of development, whether it be in the vision stage or in the process of implementation. Examples include the One Stop Shop Business Portal or the Parolee Tracking Kiosk, which are currently in the design phase. Both of these will provide for more efficient and effective service to citizens, while reducing the cost to provide these services.

Citizen transaction and self-service will grow in the coming years. Michigan is pursuing and investigating technologies that enable self-service, including centralized contact centers, self-service stations and online Web portals. As technology advances and can handle more complex interactions, more constituents will be comfortable using technology as their primary point of contact.

MDIT is working with its 19 client agencies to explore which projects would benefit most from these technologies to improve productivity and efficiency.

## Citizen Engagement Tools

Identify and implement the latest technologies to engage citizens in government operations and decision-making.

A key IT challenge around citizen engagement is selecting secure citizen interfaces that will improve end-user experiences and provide the state with meaningful citizen participation, leading to better decision-making. Other challenges include maintaining control of information and security and retaining knowledgeable staff to manage the outreach and engagement efforts.



The Web has opened endless possibilities for engaging with the public, however, the benefits of using the Web for citizen-government interaction have not been clearly documented. Some changes are measurable and evident, such as the recent shift away from “service-oriented” architectures toward “Web-oriented” architectures. Governments are beginning to look at how mashups and other information forums can take the more granular information from government sources, and allow it to be used by others.

### Opportunities for Michigan

- Building public trust  
By providing information, asking for opinions and meeting with people in the communities where they already live, government increases its relevance and can develop the public’s trust by being open and inclusive.
- Shaping policy  
Through the use of surveys, blogs or wikis, we can gather comments on proposed laws or work with citizens to cooperatively develop policy, leading to better decision-making. Using the Web for broad-reaching e-government efforts can boost the engagement of citizens with the democratic process.
- Gathering service feedback  
Agencies and citizens can use ratings or blogs to provide feedback on service levels and provide comment before services are designed. This will lead to a broader range of choices and targeted services for our citizens.
- Promoting government services  
Too often, government simply puts information out for “consumption” by the public. Some states, such as Utah, are promoting tourism and other government services and benefits through You Tube and other Web sites. Web 2.0 technologies also offer new opportunities to expand government’s reach. For example, collaborative tagging is practice of cooperatively managing tags which allows citizens to create new associations and ways to navigate government information and engagement efforts.

### Current Status

Michigan has several existing citizen engagement tools including survey software, syndication (RSS) feeds, and blogs that encourage citizens to focus on specific areas. We are also working with newer Web-based “social computing” environments, such as using Wikis to garner feedback on educational decision points.

In part through MDIT’s past efforts to improve accessibility, expand delivery channels, share data across governmental agencies and public engagement, Michigan’s web portal was ranked #5 among states in a 2006 Brown University study. Today, our contact with citizens continues to grow with Michigan.gov, which logged 380 million average monthly hits in 2006. The portal offers 121 live Web sites, with more than 200 online services. Some of this content is accessible via handheld devices, such as reports of beach closings, ozone alerts and lottery information, and we are working to do more.

The lists below documents additional ways we have used technology to reach out to our citizens and actively engage them in government:

Participation in surveys on a number of government decision points

*Current Examples:*

- DNR Hunting and Trapping Activity Surveys
- Michigan Tax Tribunal Survey
- Bureau of Construction Codes Training Survey
- Home/Renters Insurance Web Pages Survey
- MIOSHA Web site Survey
- MITEC Strategic Planning Survey
- Licensing Web site Survey
- Auto Insurance Web Page Survey
- Workforce Development Survey

Participation in Blogs and seeking feedback through Wikis

*Current Examples:*

- MDA licensing consolidation Blog
- Sustainable green chemistry Blog
- Seeking curriculum feedback via Wikis
- Using Wikis to gather student data
- Agriculture & food safety issues Blog
- Workforce retention Blog
- Health careers Blog
- Hydrology issues Blog

Asking citizens for assistance and feedback

*Current Examples:*

- Submit Your Best Shot - Soliciting great Michigan images for posting on the portal
- Reporting abuses against children and locating missing children
- Reporting domestic abuse, school violence

Offering information to citizens through, RSS feeds, podcasts, alerts, text messaging and videos

*Current Examples:*

- DEQ news and announcements RSS
- DNR hot hunting topics RSS
- MDA food recalls RSS
- Governor's weekly podcast
- Text messaging on lane closures
- Hunting season dates via text message
- Cyber security RSS
- Taxes-Michigan Business Tax RSS
- Weather and road condition alerts
- E-Citizens resource pages

## Next Steps

Citizen engagement is an ongoing effort because technologies and the needs of citizens are always changing. We will take the following next steps to make sure that we are using technology to do everything we can to reach out to our citizens, through safe and accessible channels.

- Complete an inventory of all citizen engagement activities underway in Michigan government to assist agencies in meeting business drivers
- Identify an MDIT liaison to focus on citizen engagement opportunities and to serve as a resource to the MDIT information officers
- Expand the scope of the MITEC Citizen Self-Service Committee to include citizen engagement technologies and recommendations
- Work within the new Innovation and Information Technology Advisory Board (Goal 6) to evaluate and report on the Web 2.0/3.0 opportunities for citizen/government engagement

## Shared Technology Infrastructure

Share and integrate infrastructure resources between public and private partners, such as data centers, servers and connectivity through fiber, wireless and other communications capabilities.



In Michigan, prior to the formation of the Department of Information Technology, information technology was developed independently in the various agencies within the state. As the agencies made individual decisions of technologies to use and how to maintain or upgrade them, the statewide technology infrastructure grew increasingly complicated. This diverse infrastructure of computers, telephones, information storage devices and computer programming methods prevented Michigan from realizing the optimal value of information technology.

With the advent of MDIT, Michigan has worked aggressively to build a unified technology infrastructure that is well-coordinated, interoperable and universally available. For state government, a shared technology infrastructure is steadily evolving as the primary structural foundation that links and empowers all operations.

### Opportunities for Michigan

Through a shared technology infrastructure, the benefits are many....

- Seamless information accessibility
- Improved return on investment
- Reduced operations risk
- Lower cost of ownership
- Technology resource maximization

Whether it is providing a one-stop call center for citizens to access state services quickly and securely or giving state employees collaboration tools like real-time, on-line meetings to cut down on travel time and cost, a shared technology infrastructure is delivering the promises of tomorrow for Michigan.

The state of Michigan benefits not only for immediate reasons such as cost savings and service improvements, but also in that future technology applications will require a modern, integrated infrastructure. Some of the future opportunities that will build on the integrated infrastructure include:

- **Contact centers:** An enterprise contact center strategy, where Michigan citizens can contact state government via convenient channels, relies upon having standard phone and computer systems. State employees, at various physical locations, will be available to answer citizens' needs at the touch of a phone or click of a computer mouse. In order to truly function as one face of government, those employees' phone and computer systems must be able to communicate effectively using standard technology system designs.
- **Unified communications / messaging:** As citizens increasingly turn to alternative communications channels such as e-mail and Web access, state employees will need the ability to simultaneously respond with various media. Standard, interoperable technologies will enable employees to monitor and use telephone, e-mail and Web interfaces as easily as traditional face-to-face interactions.
- **Virtual teams:** Government employees will have to collaborate, across agencies and locations, in order to most efficiently deliver the services that citizens demand. The technology tools that will allow these employees to share data and information will require that an integrated infrastructure provides the link among all agencies statewide.

- Mobile work force: As more state employees work outside of a typical office environment or work from multiple offices, new technologies will be adapted to enable the mobile worker. A worker will carry her telephone number with her, having immediate access to a phone line anywhere she connects her computer to a network. She will have access to any state application she needs, from any state building or from home. She will be able to check e-mail via the telephone. All of these capabilities are built on the foundation of a modern, integrated infrastructure.

## Current Status

Michigan continues to build its comprehensive approach to shared technology infrastructure on many different levels within state government. Two initiatives in particular are driving Michigan's overall strategy:

- Centrally-managed voice systems  
Providing central management of voice systems throughout state government enables economies of scale in the purchase of equipment and provision of support to state telephone systems. A consistent implementation of telephone systems across agencies also allows systems to work together, ensuring that call and voicemail transfers are seamless across state government. Finally, central management of voice systems provides an opportunity to move the state's system forward with new telephone technologies, such as Voice over Internet Protocol (VoIP), that provide the foundation for contact centers, mobile workers and many other trends for how government does business.
- Michigan/1 program  
Michigan/1 is a vision for the baseline infrastructure of the state's computing environment that merges 19 separate agency environments into one, resulting in reduced costs and improved services. Program components include:
  - Active Directory office platform technology (ADOPT): Provides a common technology set up for offices across the state, including standardized computers and the capability to remotely update or fix computers
  - Messaging consolidation: Brings all state e-mail users into one of two common e-mail installations, and redesigns all state e-mail infrastructure for optimal cost-effectiveness
  - Storage / backup: Provides shared solutions for storing the state's data and protecting it with back-up procedures
  - Hosting center server centralization: Consolidates data centers across the state in three state-of-the-art, centralized data centers
  - Enterprise metrics monitoring: Tracks state systems automatically, alerting staff when repairs are necessary

## Next Steps

Michigan will continue to explore new opportunities for shared infrastructure between state agencies and in collaboration with other public and private partners. With state government, key continuing initiatives include:

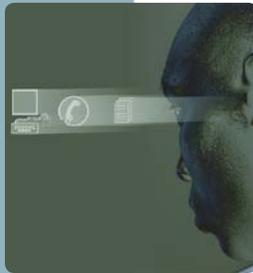
- 18,000-20,000 Michigan/1 Adopt standardized desktop packages rolled out by Spring of 2008; complete roll out by end of 2009
- 75% of all state offices converted to Voice over Internet Protocol (VoIP) technology by 2012
- Unified approach to communication and collaboration tools
- Continue data center consolidation
- WiFi available to all state locations in 2008
- All cellular contracts managed centrally by 2010
- Centralized and standardized LAN solution for 50% of state users in 2008
- Call Center Consolidation

## Information Collaboration and E-Discovery

Facilitate the sharing and integration of data among departments to leverage information and to enable quicker and more effective decisions; effectively manage the storage, preservation, and retrieval of electronic information as it relates to governmental operations.

The state of Michigan's executive branch consists of 19 separate departments and multiple agencies. Core services include those that directly benefit constituents and include policy and program development and administration, as well as the actual delivery of services. Common administrative services include those that are necessary for government to function, such as finance, human resources and procurement.

Over the past decade, these disparate departments have begun to interact and collaborate on projects, initiatives and policy direction. Driven by the governor's statewide priority areas, all 19 state departments have come together to work toward a statewide vision of goals.



The breaking down of old barriers between government agencies has greatly increased the need for common methods of communicating, sharing and bringing information to decision makers. Through overall advances in information technology – and as Michigan develops its own unified approach to information access and collaboration services – departments and agencies will better understand what information is available and be able to get the information they need when they need it. Having a coordinated strategic approach will enable state leaders to make timely and better-informed decisions.

Additionally, recent changes to the Federal Rules of Civil Procedure (FRCP) governing standards for managing electronically-stored information, and the increasing number of lawsuits related to discovery of government information, require the development of a legally-constructed and consistent enterprise-wide approach to e-discovery.

### Opportunities for Michigan

The potential benefits to Michigan from increased data sharing, integration and a consistent e-discovery protocol are many and include:

- **Improved Communication:** For the State of Michigan, one of the most important benefits from integration is the improvement of communications between departments, agencies and even among workers within their own agency.
- **Improved Decision Making:** As a direct result of improved communications and up-to-date information access, key managers and personnel will be able to make proactive and reactive decisions faster and more accurately.
- **Enhanced Service Delivery:** Across the spectrum of involvement within state government, the ability to easily access reliable and accurate information is essential. By sharing across programs, agencies and even other governments, the State of Michigan will have better information to use in providing improved service to the citizens, businesses, governments and employees it serves. A coordinated and enterprise-wide system for e-discovery will enable Michigan to quickly respond to meet judicial requirements and avoid sanctions.

### Current Status

Already, Michigan is actively engaged in improving information access and collaboration. Some notable examples of the state's progress include:

- **Teradata Warehouse:** The State of Michigan currently is sharing over 2 terabits of information, which equates to approximately one-tenth of all of the books in the largest library in the world, between five state agencies.

- Child Support Enforcement System (CSES): Agencies continue to develop data-sharing agreements for projects that involve multiple agencies. One key example is the Child Support Enforcement System (CSES), which currently shares information between Department of Treasury, court systems, Department of State and Department of Human Services to ensure that child support payments are paid on time.
- Michigan Health Information Network (MiHIN): The state of Michigan has placed a priority on its goal to use information technology to drive quality improvements and efficiency in Michigan's health care system. This effort will allow sharing of information between public and private entities to improve patients' healthcare.
- Direct certification for school lunches: By cross-referencing data from the Department of Education to food stamp eligibility data, children that live in eligible households are now being directly certified for free school lunches. This not only improves children's access to this vital service, but it also reduces processing time and costs.

## Next Steps

In cooperation with the Michigan Information Technology Executive Council (MITEC), MDIT continues to examine the feasibility of implementing shared information and services throughout the state. Key areas for growth have been identified and include:

- Agencies Sharing Knowledge (ASK): Will create a statewide data-sharing strategy and infrastructure that will provide a single, accurate and consistent source of data for the state's agencies and the services that they supply to its citizens.
- Procurement: Improved automation and identification of the state's aggregate demand for negotiation leverage.
- Standardized and automated HR functions: Create new time and cost savings through a unified approach to managing the State's human resources.
- Human services/case management: Having accurate information contained in one system would enable case workers to spend less time on paper work and more time helping the clients.
- Grant application and accounting: Enable multiple agencies to share grant application information, allow for better budgeting. New e-grants system will provide an electronic portal to exchange information between grantors and grant applicants for all state-managed grants.
- Inventory management: Greater visibility into capitalized and expensed assets, including facilities and maintenance, repair and operations (MRO) items
- Budget development, tracking and sharing: Various operational modules can be tied into a budgeting module for more timely management, with fewer errors caused by redundant data entry.
- Enterprise Architecture: The 2006 MDIT Enterprise Architecture Plan establishes an enterprise-wide approach to information management. The plan defines the steps that will be taken over the next several years. These steps include defining owners for all information entities, creating cross-agency policies for data sharing, developing an open document strategy and providing common data standards for all agencies.
- Document Management Strategy Team: The development of a cross-agency team will provide guidance and continuity for enterprise content management initiatives statewide (including electronic image and document management tools). The team's strategy will address existing practices, future projects, technology considerations, records management requirements, technology standards, business process best practices, overall assumptions and solutions. A special e-discovery task force will work with this team to identify how electronic content management (ECM) tools can assist with discovery of electronically-stored information.

## Enterprise Mobility

Utilizing technology to connect state employees to their work anywhere at anytime from anyplace. Projects include infrastructure and application access improvements with the adaptability of being scalable for multiple applications to meet specific business needs.

Thomas Friedman, in *The World is Flat*, points out that intellectual work and intellectual capital can be delivered from anywhere. Forrester Research, Inc. defines enterprise mobility as the ability for an enterprise to communicate with suppliers, partners, employees, assets, products and customers, irrespective of location.

Mobility incorporates devices (laptop, notebook, form factor devices supporting mobile line-of-business applications, cell phone, PDA, USB memory stick, CD, Palm, MP3 player, smartphone, laptop, iPod, camera); connections (Bluetooth wireless, virtual private networks (VPN), wireless LAN, WLAN, mesh, WWAN, high speed Internet access); applications (E-mail, information retrieval, data transfer); security (secure socket layer SSL) and communications (VoIP, Unified Communications). Other expected trends include:

- According to Gartner, by 2011, 65% of enterprise employees globally will have only one phone number that will go direct to a mobile service or, via a converged solution, on to the device of choice, whether fixed or mobile
- Most companies will not replace desk phones with IP during the current upgrade cycle, but this purchase should be the last hard-phone purchase in most corporate environments
- Forrester Research reports that more than 20% of enterprises surveyed in 2007 are currently using or upgrading mobile versions of enterprise applications, with task- and role-centric applications beginning to take hold in the mobile enterprise
- 63% of enterprises in North America will either slightly or significantly increase their usage of laptops
- As more employees go mobile and work outside corporate offices on a regular basis, enterprise IT faces new challenges associated with integrating and managing the growing number of business communications technologies needed to support an increasingly virtual workforce
- As in any other large enterprise, today's round-the-clock business environment is pushing government managers to adopt mobile technologies and corresponding services that enable continuous communications and productivity

### Opportunities for Michigan

Around the globe, companies are implementing mobility solutions to increase employee productivity, improve customer responsiveness and ensure data protection for regulatory compliance.



Telework benefits the employer, employee, and community. For the employer, it increases productivity, reduces overhead and occupancy costs, helps recruit and retain good employees, improves attendance and increases efficiency through advanced technology. For the employee, it increases productivity, promotes job satisfaction, reduces commuting time, reduces transportation expenses and improves quality of life by providing more family and personal time and less stress. For the community, it decreases traffic and highway congestion, lessens parking problems, decreases air pollution, reduces energy consumption and increases time for civic involvement.

MDIT and MITEC recognize the importance of mobile worker technologies in the accomplishment of enterprise-wide business goals. Specifically, this technology will enable the State of Michigan to gather field data electronically, provide on-site services directly to businesses and citizens and improve working conditions for employees in rural areas.

The opportunities for mobile worker technology abound in the State of Michigan, enabling the state to be closer to its citizens and reducing costs. Some examples where mobility can be used in state government include:

- Maintenance and repair workers
- Staffing call centers (virtual call center)
- Licensing and regulatory employees
- Field inspectors
- Electronic medical information
- Remote account representatives to verify business information
- Continuation of government services in the event of natural or man-made disasters

### Current Status

Current application of mobile technology in Michigan state government is as varied as the different functions government serves. For instance:

- Inspectors from the Bureau of Construction Codes are currently using rugged laptops on site to perform inspections. Inspectors are able to log in at home before coming to work in the morning to upload yesterday's inspections as well as download their current day's permits
- Michigan State Police officers have the capability to access various criminal justice computer systems from wireless laptops in their vehicles
- Unemployment Agency investigators are able to document their investigations while in the field and upload the changes to the main computer systems every night from home

### Next Steps

As the explosive growth in mobile technologies continues, a key challenge for Michigan will be to quickly assess the usefulness of these technologies in helping the state better serve citizens. To prepare for that challenge, Michigan is embarking on a number of new strategies:

- Develop an integrated network strategy that offers manageability, security and connectivity across a myriad of networks and devices
- Incorporate mobile technology in overall IT strategies and policies and consider mobile devices as part of the state's telephony strategy
- Improve the delivery of health and human services by lowering overall costs, improving technology and streamlining the way work gets done
- Incorporate the ability to communicate and share information with cities, counties and other states

## Greening of IT

Increased environmental awareness and adoption of green principles in enterprise IT facilities, equipment purchases and disposal of equipment.

Forrester Research defines green as IT suppliers and their corporate customers changing the way computing assets are designed, manufactured, operated and disposed of to gain efficiency and cost savings, while reducing environmentally harmful impacts.

Gartner defines green IT as optimal use of information and communication technology (ICT) for managing the environmental sustainability of enterprise operations and the supply chain, as well as that of its products, services and resources, throughout their life cycles.

Worldwide, information technology assets account for approximately 2% of global carbon dioxide emissions; one-third of information and communication technology's (ICT) power consumption and carbon dioxide emission comes from PCs and monitors; 9 to 15% of office power is consumed by office equipment (PCs and monitors) and 60% of PCs are left on after hours.

### Opportunities for Michigan

- Environmental sustainability

Like all governments, Michigan shares an obligation to reduce threats to our air, land and water and fight global climate change. Reducing carbon dioxide emissions, properly disposing of outdated equipment and cutting overall energy consumption are all important ways to fulfill these responsibilities.

- Promote green technologies for citizens and business

By engaging in green IT, Michigan can lead by example and promote green consciousness among all of our state's residents and businesses. Aside from helping protect our environment, embracing environmentally-sustainable practices can make Michigan a more attractive location for alternative energy companies and other new and emerging job providers.

- Reduce energy costs

Over the past five years, data centers have reportedly doubled their energy usage (Kookey, February, 2007). In Michigan, controlling energy usage is critical to bringing costs into line with budgets that are already under significant strain.



### Current Status

Numerous green IT initiatives are currently underway and have been integrated into projects across MDIT and Michigan state government. These include:

- Data center enhancements

The data center mainframe and server consolidation is reducing redundancies and increasing efficiencies. In 2002 data centers were scattered across Lansing and the state. Twenty-nine of these are now closed, which has brought servers into a more secure and managed environment, freeing more than 30,000 square feet of space. Ultimately, there will be only three managed data centers, increasing MDIT's ability to control cooling and power consumption.

- M/I Managed Desktop initiative increases efficiency, lifecycle and inventory control
- Use of "power saver" printers
- New laptop configuration standards promote Energy-Star compliant power sources
- Automated Asset Recovery Program disposes of assets or places them in stock at the Depot for future deployment

- Increased use of videoconferencing, which has reduced employee mileage
- Executive Directive No. 2006-4  
Requires that employees turn off all networked desktop and notebook computing devices at the end of the work day whenever possible and requires logoff.

## Next Steps

MDIT, in partnership with other state agencies, is embracing the opportunity to further conserve resources and reduce harmful emissions. Looking forward, future actions include :

- Assess the current environment, carbon dioxide emissions and power consumption before changes are made for later comparisons
- Continue to make current equipment run more efficiently
- Continue data center consolidations efforts
- Consolidate critical applications to same servers that require 24x7 uptime
- Use centralized power management and job schedulers to power off equipment when applications are not active (such as over state holidays)
- Make use of Unified Communications (UC), the converging set of voice, data and video infrastructure services that integrate with common business applications to reduce typical communication bottlenecks
- Increased product life cycles - recycle or have vendors buy back hardware
- Incorporate green criteria into IT systems procurement and select based on environmental attributes

In addition, MDIT is discussing Green IT requirements and criteria that will be included in future technology acquisition RFP's for desktop, server and network components. IT Procurement has also completed the Climate Savers Computing Initiative.