60.4.1 Commercial Software

There are a number of commercial off-the-shelf and custom software used by the BHO STOC. The typical DOT Enterprise Workstation software like Microsoft's Office 2007 is utilized on control room workstations with the exception of Microsoft Outlook.

The core system software used by the STOC is provided by TransCore. It is not an "off the shelf" (OTS) software but rather a custom designed and constructed software specific to Wisconsin ITS efforts but built on a common (software) infrastructure that TransCore utilizes for all ITS software clients.

- TransSuite (Transcore)
  - ATMS – Map for display and control of equipment
  - TIS – controls messages on dynamic and portable signs, HAR
  - IMS – Tracks incidents (crashes) on freeways
  - CCS – Central communication server
  - FMS – Freeway management server (aka "CCS")
  - Intranet application – web application to sue software remotely

  TransSuite®:
  * Traffic Control System
  * ATMS Map
  * ATMS Explorer
  * Traveler Information System (TIS)
  * Video Control System (VCS)
  * Incident Tracking and Management System/MICE
  * Freeway Monitoring and Management System/FTMS

  This is the system software for the STOC and Madison TOC.

- Cartegraph
  - Signal View – Inventory of equipment in field (cameras, signs, and controllers)
    SIGNALview gives traffic engineers and technicians a powerful tool for maintaining and managing all components of your signal system. You can use SIGNALview to accurately show a signal group or intersection. It also tracks supports, head units, detectors, controllers, conflict monitors and auxiliary equipment. The easily customized SIGNALview interface enables you to access forms, online libraries and other data fields. And SIGNALview integrates seamlessly with other CartêGraph applications to create a complete public works solution that empowers you to manage with ultimate efficiency.
  - Work Director – ticketing system to track field equipment and maintenance requests
    WORKdirector gives you the functionality to manage all of the work activities performed by your organization – all in an easy-to-master interface. From an initial request for work to the scheduling of routine maintenance through the completion of each project, WORKdirector tracks and maintains data on activities, materials, employees and equipment. With its customizable interface, including forms, libraries and reports, WORKdirector has virtually unlimited potential to seamlessly automate your daily tasks. You can quickly and easily modify field names, design on-line work orders to match current paper forms, create reports to output information, and more. WORKdirector works with other CartêGraph programs to create a powerful, high-level public works management system.

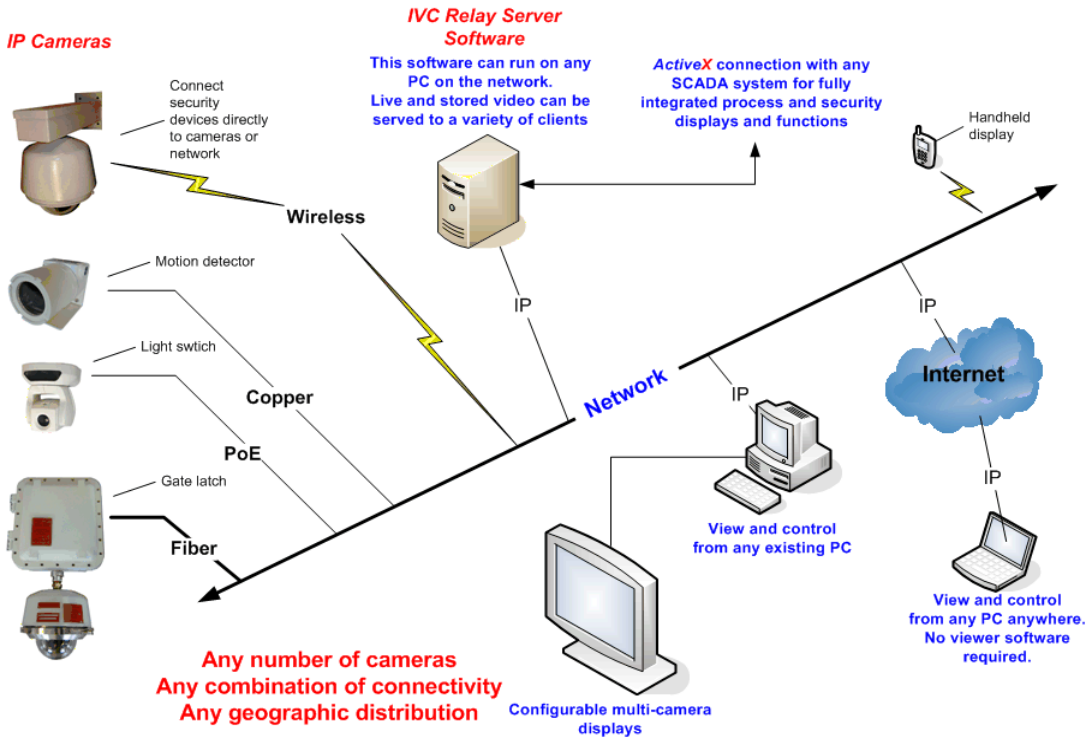
- Industrial Video Control (IVC)
  - IVC Relay – Web server/video server software – bring in many camera/video to many users.
  - Viewstation – workstation software to watch video
  - Tour Server – Control video tours – runs on server.

  Each of the IVC cameras and the Relay Server has its own IP address. Just connect them to your network and the installation is complete. To view and control any of the cameras simply enter the IP address for the Relay Server on any PC. No viewer software is required.

  The IVC Relay Server provides Click-to-Point steering on the video and panoramas, precise preset views triggered by security and/or SCADA events, automatic video storage and snapshots, dynamic

bandwidth management to insure that other applications on the network are not slowed, preconfigured multiple camera views, unlimited camera and viewer capacity, and much more.

IVC systems can consist of any combination of fixed-view cameras, PTZ cameras, indoor, outdoor, zoom-only, thermal, IR cameras, etc. Operators can instantly view and control cameras located at multiple locations anywhere in the world, securely via password access. The camera count and feature set can be changed at any time, usually without hardware additions or adjustments. IVC systems require no wiring apart from LAN connections, or hardware apart from the cameras.



- Coretec
  - Watchdog – video viewing software used in Madison.

    Watchdog™ System is a robust software system built upon a set of very powerful software modules in the form of reusable libraries and ActiveX controls. The package can be tailored to meet customer requirements, such as custom logos and custom hardware integration. These software modules can be easily incorporated into 3rd party software under licensing agreement, either individually or as an entire system.

- Microsoft
  - Office – Word, Excel, Access

    Microsoft Office is the most efficient suite of applications for document creation, communication and business information analysis. For many functions, the business platform has evolved from paper to the Web. Microsoft Office extends desktop productivity to the web, streamlining the way you work and making it easier to share, access and analyze information so you get better results. Office 2000 offers a multitude of new features. Of particular importance for this release are the features that affect the entire suite. These Office-wide, or shared features hold the key to the new realm of functionality enabled by Office. It makes it easier to use an organization's intranet to access vital business information and provides innovative analysis tools that help users make better, timelier business decisions. Office delivers resiliency and intelligence, enabling users and organizations to get up and running quickly, stay working and achieve great results with fewer resources
  - Windows Encoder – encode video for distribution (by UW – TOPS) to others (emergency service shared video)

- Logic Tree (511)
    - Web-based interfaces for managing the dynamic sections of the 511 website such as floodgate messaging and road/weather conditions.

- Fleet Probe

60.4.2 Commercial Open Source

- Big Brother – web app to manage network equipment
  Big Brother is an application that monitors System and Network-delivered services for availability. Your current network status is displayed on a color-coded web page in near-real time. When problems are detected, the system can immediately notified by e-mail, pager, or text messaging.
- MRTG – Multi router Traffic Grapher – graph network bandwidth utilization
  You have a router; you want to know what it does all day long? MRTG can provide this information. It will monitor SNMP network devices and draw pretty pictures showing how much traffic has passed through each interface.
- Routers are only the beginning. MRTG is being used to graph all sorts of network devices as well as everything else from weather data to vending machines.
- MRTG is written in perl and works on Unix/Linux as well as Windows and even Netware systems. MRTG is free software licensed under the Gnu GPL.
- Nagios – new web app to manage network equipment
  Nagios is the industry standard in enterprise-class monitoring for good reason. It allows you to gain insight into your network and fix problems before customers know they even exist. It's stable, scalable, supported, and extensible. Most importantly, it works.

  What does Nagios provide?

  Comprehensive Network Monitoring
  * Windows
  * Linux/Unix
  * Routers, Switches, Firewalls
  * Printers
  * Services
  * Applications

  Immediate Awareness and Insight
  * Receive immediate notifications of problems via email, pager and cellphone
  * Multi-user notification escalation capabilities
  * See detailed status information through the Nagios web interface

  Problem Remediation
  * Acknowledge problems through the web interface
  * Automatically restart failed applications, services and hosts with event handlers

  Proactive Planning
  * Schedule downtime for anticipated host, service, and network upgrades
  * Capacity planning capabilites through usage monitoring

  Reporting Options
  * SLA availability reports
  * Alert and notification history reports
  * Trending reports through integration with Cacti and RRD-based addons

  Multi-Tenant/Multi-User Capabilites
  * Multiple users can access the web interface
  * Each user can have their own unique, restricted view

  Integration With Your Existing Applications
  * Trouble ticket systems
  * Wikis

Easily Extendable Architecture
* Over 200 community addons are available to enhance Nagios

Stable, Reliable, and Respected Platform
* 10 years in development
* Scales to monitor 100,000+ nodes
* Failover protection capabilities
* Winner of multiple awards
* Constant media coverage

Customizable Code
* Open Source Software
* Full access to source code
* Released under the GPL license

- VLC – used to watch video
  VLC media player - the cross-platform media player and streaming server.
  VLC media player is a highly portable multimedia player for various audio and video formats (MPEG-1, MPEG-2, MPEG-4, DivX, mp3, ogg, ...) as well as DVDs, VCDs, and various streaming protocols. It can also be used as a server to stream in unicast or multicast in IPv4 or IPv6 on a high-bandwidth network.

- Wireshark – to inspect network traffic and issues
  Wireshark is the world's foremost network protocol analyzer, and is the de facto (and often de jure) standard across many industries and educational institutions.
  Wireshark development thrives thanks to the contributions of networking experts across the globe. It is the continuation of a project that started in 1998.

  Features
  Wireshark has a rich feature set which includes the following:

  - Deep inspection of hundreds of protocols, with more being added all the time
  - Live capture and offline analysis
  - Standard three-pane packet browser
  - Multi-platform: Runs on Windows, Linux, OS X, Solaris, FreeBSD, NetBSD, and many others
  - Captured network data can be browsed via a GUI, or via the TTY-mode TShark utility
  - The most powerful display filters in the industry
  - Rich VoIP analysis
  - Read/write many different capture file formats: tcpdump (libpcap), Pcap NG, Catapult DCT2000, Cisco Secure IDS iplog, Microsoft Network Monitor, Network General Sniffer® (compressed and uncompressed), Sniffer® Pro, and NetXray®, Network Instruments Observer, NetScreen snoop, Novell LANalyzer, RADCOM WAN/LAN Analyzer, Shomiti/Finisar Surveyor, Tektronix K12xx, Visual Networks Visual UpTime, WildPackets EtherPeek/TokenPeek/AiroPeek, and many others
  - Capture files compressed with gzip can be decompressed on the fly
  - Live data can be read from Ethernet, IEEE 802.11, PPP/HDLC, ATM, Bluetooth, USB, Token Ring, Frame Relay, FDDI, and others (depending on your platfrom)
  - Decryption support for many protocols, including IPsec, ISAKMP, Kerberos, SNMPv3, SSL/TLS, WEP, and WPA/WPA2
  - Coloring rules can be applied to the packet list for quick, intuitive analysis
  - Output can be exported to XML, PostScript®, CSV, or plain text