

Appendix H – City Technical Background

1 Local Area Networks

The City utilizes 2 Windows 2003 Active Directory forests for Enterprise directory services. The City mainstream File and Print Servers are running Windows 2003 R2 or Windows 2000, with a few legacy servers still using the Novell Netware.

2 Desktop and Portable PC Environment

(a) Desktop users primarily run PCs from a variety of vendors (mostly HP and IBM). Many of these operate in a Windows XP Professional, Windows 2000 Professional, Windows XP Pro Tablet and/or Windows CE environment with a limited number of PCs running Windows 9x, Windows NT 4 Workstation or Mac OS. The City also has Laptop, Tablet PC, Blackberry and iPaq devices.

(b) The City has standardized on MS Office and MS Internet Explorer for office productivity and MS Exchange 2003 and Outlook 2000/XP/2003 for E-mail, with an SMTP gateway to the Internet. A variety of spreadsheet and database applications are used in the City and several custom applications have been written on these platforms.

3 Security

(a) The City has Checkpoint Nokia Firewall appliances to implement various security zones to secure its network and IT assets. The public facing DMZ, where publicly accessible devices reside, is one of the security zones.

(b) The City uses Symantec NAV 10 as its Enterprise anti-virus solution. An RSA ACE authentication server and the use of RSA Secure ID hard tokens enforce strong authentication for VPN and dial-in access.

4 Database Servers and Software

The City's Enterprise database servers are primarily departmental-sized HP/Intel servers running MS Windows 2003 and Oracle 10g SE. Throughout the organization a variety of PC based databases are in use, including FoxPro, Dbase, Paradox, and Access/MSDE, as well as other departmental databases such as MS SQL Server and IBM UDB.

5 Internet/Intranet/Extranet

The City's Enterprise Internet/Intranet servers are primarily HP/Intel servers running MS Windows 2003 and MS IIS 6.0. Applications are written with ASP, COM and .Net, and are secured with AD security (or application based security if the user population is too large).

6 GIS – Land Based Information Systems

The City's GIS application servers are primarily HP/Intel servers running MS Windows 2003, MS IIS 6.0 and GeoMedia WebMap Version 5 and HP/Intel servers running MS Windows 2003 and Oracle 10g SE (for spatial data).

7 Systems Management

The City uses BMC Patrol 3.2 and Microsoft Operation Manager 2005 (MOM 2005) for Enterprise performance/availability management. Plans are underway to extend capacity planning and service level management. The City also uses Remedy ARS Helpdesk for Enterprise problem/change management. Full life cycle IT asset management is planned as well as integration with the help desk and ERP. A number of departments have implemented their own Help Desk/Asset Management and Problem Management systems. The majority of Windows servers and PCs are using various internal SUS (Systems Update Services) servers for system updates. A plan to migrate SUS to WUS (Windows Update Service) for consolidating the Windows, Exchange, SQL and Office systems updates is set for year end 2006.

8 Backup/Recovery and Storage Management

The City has IBM TSM for Enterprise back-up/archive/recovery solutions for the distributed computing platforms and applications (utilized by most departmental systems). The IBM TSM service is using D2D2T (Disk to Disk to Tape) hierarchy storage backup infrastructure (i.e., local backup copy is online and remote backup copy is on LTO-2 Tapes). The City is in the process of migrating the majority of its Enterprise Servers to exploit SAN and SAN Boot Technologies to minimize the server support costs and provide a utility-like storage infrastructure. Three SAN subsystems have been implemented – 1. HDS Tagma NSC55; 2. HDS 9570V; 3. HP EVA 5000.

9 Printing

An IBM InfoPrint/Windows 2003 system is used to cluster a pool of HP LJ9000/8100 Printers to provide a remote mainframe and high volume distributed computing platform printing service (i.e. Water Work Bills, Assessment Notices, and Property Tax Bills). Many departmental sites currently using the applications have printers installed for hard copy output. The plotters and printers are all network attached using TCP/IP protocols. The City's Print Shop also runs a high volume Digital Print Solution for B/W and Color paper with editing and finishing package capabilities.

10 ERP System

The City has implemented PeopleSoft Version 8 Financial, Human Resources and Enterprise Planning functionality to address its ERP requirements. All major financial and HR systems within the City integrate with the PeopleSoft environment.

11 Communications Network

The City of Winnipeg Backbone Network Infrastructure is the framework that allows data communications between City departments regardless of their location (currently over 150 buildings). All devices connected through the Backbone can communicate with each other. A variety of internetworking technologies are used in the Backbone Network Infrastructure. These range from 100/1000BaseT fibre optic connectivity for buildings with large LANs, 10 Mbps for medium sized LANs and 3 Mbps ADSL connections for small LANs. Cisco routers and switches are used to implement the WAN and LAN.

Volumes	Site-to-site connection speed
8	2 x 1 Gbps full duplex
61	100 Mbps full duplex
37	10 Mbps full duplex
33	3 Mbps
30	128 kbps

All location are within the City of Winnipeg with a few exceptions (7740 Wilkes, 100 Ed Spencer Dr, 1901 Brady Road, Glacial Gravel Pit, Deacon Reservoir).