New Network Design - Compromise/ Cheapest:

1 WS-C3750G-24T-S Catalyst 3750 24 10/100/1000T Standard Multilayer Image

2 WS-C2950G-48-EI Catalyst 2950; 48 10/100 with 2 GBIC slots; Enhanced Image (* Times 2)

Total: $14332.5 ex gst

This option makes use of some existing network infrastructure, it is keeping the 1994 design but just upgrading some of the crucial links to Gigabit (Gb) ethernet.

The existing cabling should be ok, but the updated links will need to be double checked against the required specification for Gigabit ethernet.

The peak performance will be upgraded from approximately 11.3 Megabytes per second (MB/ps) to 116.3MB/ps from the main switch to the Gb linked servers and downstream switches. This should allow more clients to communicate close to full speed (approx. 11.3MB) before the links are saturated.

38.7 Million Packets per second forwarding rate (Cisco Catalyst 3750G-24TS)
32 Gb/ps maximum forwarding bandwidth switching fabric

10.1 Million Packets per second forwarding rate (Cisco Catalyst 2950G-48)
13.6 Gb/ps maximum forwarding bandwidth switching fabric

This is also limited or bottlenecked at high load to the speed of the cable connecting the switches, approximately 116.3MB/ps
New Network Design - Fastest/ Most Expensive:

1 WS-C6506 Cat 6506 Chassis; 6slot; 12RU; No Pow Supply; No Fan Tray
2 SC6K-SUP2K8-8.1 Catalyst 6000 Sup 2 Flash Image; Rel 8.1
3 WS-X6K-S2-MSFC2 Catalyst 6500 Supervisor Engine-2; 2GE; plus MSFC-2 / PFC-2
4 WS-X6182-2PA FlexWAN Module for Cisco 7600 / Catalyst 6000
5 PA-A3-OC3SMI 1-Port ATM Enhanced OC3c/STM1 Singlemode[IR]Port Adapter (* Times 2)
6 WS-X6148-GE-TX Catalyst 6500 48-port 10/100/1000 GE Mod.; RJ-45 (* Times 2)
7 WS-C6K-6SLOT-FAN Catalyst 6000 Fan Tray for 6-Slot Systems
8 WS-CAC-1300W Catalyst 6000 1300W AC Power Supply (* Times 2)
9 CAB-7513ACA AC POWER CORD (AUSTRALIA) (* Times 2)
10 S6MSF2ZV-12113E Catalyst 6000 MSFC2 IOS SERVICE PROVIDER W/VIP
11 MEM-S2-128MB Catalyst 6000 Sup2 Mem; 128MB DRAM Option
12 MEM-MSFC2-128MB Catalyst 6000 MSFC-2 Mem, 128MB DRAM Opt

Cost: $82236.6 ex gst

This option is designed to perform very well regardless of the network load.

It would be safe to allocate $5000 for rewiring using the latest Category 6e standard

The peak performance of every desktop machine will be upgraded to 116.3MB/ps. Servers will range from 11.3MB/ps - 116.3MB/ps Ethernet. The ATM linked servers will run at a constant (not peak) speed of approximately 19.4MB/ps. Every port is linked together by:

210 (upgradeable to 400) Million packets per second forwarding rate
256Gb/ps (upgradeable to 720Gb/ps) maximum forwarding bandwidth switching fabric

A significant upgrade.