

Computing and Networking Infrastructure Consolidation

Mandatory Pre-Proposal Conference

October 24, 2003

Opening Remarks

Gary Weeks, Director

Department of Administrative Services

Opening Remarks

Don Fleming, State Chief Information Officer
Department of Administrative Services

Solicitation Process Overview

Nick Betsacon, State Procurement Office
Department of Administrative Services

- State Procurement Analyst responsible for supporting the sponsors of the underlying procurement
- Email: nicholas.betsacon@state.or.us
- Acquisition of Personal Services under
 - ORS 279.051, 279.712, and
 - OAR chapter 125 division 20

Solicitation Process Overview

Solicitation Schedule:

- **October 8, 2003 – RFP Release**
- **October 24, 2003 – Pre-proposal Conference**
- **November 5, 2003 – Solicitation Protests Due**
 - Clarification
 - Modification/Protest of Terms and Conditions
- **November 10, 2003 – Proposer Q&A Released**
- **November 19, 2003 – Closing**

Solicitation Process Overview

Estimated Proposal Evaluation Schedule:

- **November 19 – 21, 2003**
 - Administrative Review
 - Preliminary responsiveness determination of submitted Proposals
- **November 21, 2003 – December 2, 2003**
 - Scored evaluation of Proposals passing Administrative Review
- **December 4 – 11, 2003**
 - Issue Notice of Intent to Award
 - Award Protest Period

Request for Proposal: Overview

- Data Center Overview
- Network Overview
- Key Task Areas

Data Center Overview

Mike Freese, Deputy State CIO

Department of Administrative Services

Data Center Overview

- “Participating Agencies”
 - 1700 + Installed Processors (Mainframes, Mid-Range, Server)
 - Mainframes (IBM – 3, Unisys - 1)
 - Midrange (IBM AS/400 – 8, Unix - 224)
- Three Main Data Centers
 - Department of Human Services (DHS)
 - Department of Transportation (ODOT)
 - Department of Administrative Services (DAS)

DHS Data Center Overview

- Major Customers
 - DHS - COBOL, CICS, DB2, IMS, VSAM, TSO/ISPF, Sybase
 - Department of Justice (Division of Child Support) - COBOL, CICS, DB2, VSAM, TSO/ISPF
 - Employment Department - COBOL, CICS, VSAM, TSO/ISPF, Oracle

DHS Data Center Overview

- Technology
 - OS/390, IBM 9672-X37
 - 10GB memory
 - (5) LPARS plus a CF LPAR
 - (28) Parallel channels
 - (40) ESCON channels
 - (4) FICON channels
 - (4) OSA 1 GB adapters
 - 1 OSA 100 MB adapter

DHS Data Center Overview

- Technology (Continued)
 - OS/390, IBM 9672-X37 (Continued)
 - 80-90% Average Capacity during peak hours and growing
 - DASD – approximately 1.8 TB
 - HDS 7700E
 - HDS 9960
 - Tape
 - IBM VTS (3494) ~100,000 logical, ~420 physical
 - 3480 ~11,500
 - 3490 ~1,700
 - 3590 ~500

DHS Data Center Overview

- Technology (Continued)
 - UNIX
 - AIX
 - 6 managed machines with 25 LPARs
 - 5 servers
 - TOTAL of 70 processors approximately 65% utilized
 - SUN
 - 16 servers
 - 7 storage arrays
 - TOTAL 74 processors approximately 70% utilized
 - Linux
 - IBM machine running RedHat Linux
 - DASD
 - Hitachi 9960 SAN

DHS Data Center Overview

■ Facilities

- Check Storage Room – 18' 9" x 11'
- Cartridge Storage – 12' 6" x 11'
- Forms Storage – 37' x 24'
- Computer Room – 118' x 48' w/Halon system
- Tech Support Area – 48' x 34'
- Offsite storage – 884sqft
- UPS – (3) 80KVA – 240KVA total
- HVAC – (3) units on roof, capacity unknown.
- Generator – 600KW

DHS Data Center Overview

- Technology Direction
 - Sysplex; separate production, test, and development LPARs.

ODOT Data Center Overview

■ Major Customers

- DMV – Primarily COBOL applications on mainframe CICS & DB2 platform.
 - Main Applications are Vehicle and Driver apps.
 - Approx 700 internal users and several thousand external users.
- Motor Carrier - Primarily COBOL applications on mainframe CICS & DB2 platform, plus a small Informix installation.
 - Main Applications are Motor Carrier Information systems (registrations, transactions, financials, tax collection for the intra/interstate trucking industry.)
 - Approx 300 internal users and several thousand external users.

ODOT Data Center Overview

■ Major Customers (Continued)

- Highway & Transportation - Primarily COBOL applications on mainframe CICS & DB2 platform, as well as Visual Basic, Cold Fusion and Power Builder with Microsoft SQL on the Windows platform.
 - Hundreds of applications supporting 33 specific ODOT business lines.
 - Approx 3700 internal users and several thousand external users.
- Central Services - Primarily COBOL applications on mainframe CICS and DB2 platform, as well as Visual Basic, Cold Fusion and Power Builder with Microsoft SQL on the Windows platform.
 - Main applications are Payroll, Human Resources, Facilities, Fleet Management, and Financial Services.
 - Approx 4500 internal users and several thousand external users.

ODOT Data Center Overview

■ Technology

- IBM Z800 Mainframe – ZO/S, CICS Ver.6, DB2 Ver.7, CA, Compuware, 259 MIPS
 - 1.8Tb DASD, STK Powderhorn 9840 tape silo, Linux IFL, 8Gb of memory.
 - Approximately 70% utilization
- Servers – Standardized on Dell PowerEdge and PowerVault.
 - Approximately 300 Servers, including two Dell SANs.
 - Server infrastructure backed up via CommVault Galaxy.
 - Standardized on Windows 2000 Server.
 - Mix of server appliances with proprietary operating systems.
 - Approximately 45 UNIX servers (Solaris, AIX, SCO).
 - Functions include Exchange 5.5 email, Microsoft SQL 6.5/7/2000, Infrastructure utilities such as virus protection, internet/intranet architecture, and traditional file and print services.

ODOT Data Center Overview

■ Facilities

- Floor space consists of 6100 square feet of raised-floor computer room and nearly 1000 square feet of supply storage space, both climate controlled by HVAC systems.
- Approximate monthly power utilization is 30,000KWH

ODOT Data Center Overview

- Technology Direction
 - Increased utilization of Mainframe IFL.
 - Web enabling traditional legacy applications for internet access.
 - Server consolidation, where appropriate.
 - Thin/fat client in specific business areas.
 - Wireless networking where appropriate.
 - Infrastructure scaled to support video and new high bandwidth requirements.

DAS Data Center Overview

■ Major Customers

- Oregon Public Employee Retirement System (PERS)
- Lane County Regional Information Systems - Area Information Records System (AIRS)
- Oregon Youth Authority, Juvenile Justice Information System(JJIS), 4 Oracle databases, 2100 users
- Oregon Parks and Recreation Department, Financial Management System (FMS), 2 Oracle databases using Oracle 9iAS application server, 130 users
- Dept. of State Lands, Oregon Unclaimed Property public web/database application.
- DAS State Controllers Division -State Financial Management Application (SFMS); Oregon State Payroll Application (OSPA); SFMS Datamart, OSPS Datamart, DB2 UDB database, 500 direct users, many other users who utilize the Datamart via other applications that utilize the Datamart

DAS Data Center Overview

- Major Customers (Continued)
 - DAS Budget and Management Division, Oregon Budget Information Tracking System (ORBITS), 7 Oracle databases, 275 users
 - DAS, Legislative Information Notification Update System (LINUS), 2 Oracle databases, 71 State Agencies are utilizing with 1-20 users per agency
 - DAS Public Employees Benefit Board, Benefits Management System (BMS), 2 Oracle databases using Oracle 9iAS application server, currently in development, anticipated 45,000 users
 - DAS IRMD Geospatial Enterprise Office (GEO), Geospatial Clearinghouse, Arc SDE Oracle, Arc IMS, This is a web enable data clearinghouse that receives 500,000 hits/month and 400 data downloads/month with approximately 300 GB of data hosted
 - ALL DAS Enterprise LAN Desktop services including Active Directory, Exchange E-Mail, and Citrix services for 1,000 user base.

DAS Data Center Overview

■ Major Customers (Continued)

- DAS IRMD Enterprise Network Services (ENS), Billing System, 3 Oracle databases, 60 users; Operation Support System (OSS), 2 Oracle databases using the Remedy ARS server
- DAS IRMD E-government, E-Commerce Portal, 4 Oracle databases, using ColdFusion application server, this is a combination of 4 customer applications selling product on the internet
- DAS IRMD E-government, Content Management System, 6 Oracle databases, internet enabled application

DAS Data Center Overview

■ Technology

- Mainframe (IBM z/800 Series), 8GB Real Storage, 1 IFL (Linux Processor), OSA Express FE Adapter, OSA GB Adapter, 44 ESCON Channels, 6 FICON Channels.
Running near capacity, in partitioned environment with three z/OS systems, approximately 6000 users, 17 CICS regions running up to 550,000 transactions daily, and nine DB2 and IMS databases.
 - z/OS version 1.2, DB2 version 6, DB2 version 7, IMS version 7.1
 - CICS TS 2.2, TSO, ROSCOE
 - Websphere Application Server 4.0
 - CA-1, SAS, MQSeries

DAS Data Center Overview

■ Technology (Continued)

- Mid-range systems include Sun Servers, comprising 50+ servers, including V120s, Netras, 220Rs, 420Rs, 480Rs, E4500s, security, high availability, redundancy and current patch levels are our standards; IBM P670, 8 CPU 1.1 GHz, 8 GB RAM, 3 Logical Partitions, security and redundancy are the standards along with high availability.
 - OS Sun Solaris (unix) version 2.6 and 2.8
 - OS IBM AIX (unix) version 5.1
 - OS SuSE Linux 8.x
 - Oracle 8.1.6, 8.1.7, 9.2, Oracle 9iAS application server 9.0.2, Oracle Gateway, OS/390 Oracle Client
 - DB2 UDB 7.2, DB2 Connect
 - Oracle 9iAS application server 9.0.2, Oracle Gateway, OS/390 Oracle Client

DAS Data Center Overview

- Technology (Continued)
 - Mid-range systems (Continued)
 - Jrun application server 4, Apache web server 1.3.x, 2.x, WebSphere application server, ColdFusion 4.5
 - Brio
 - Veritas Volume Manager, Veritas Cluster Server, Veritas File System
 - ESRI Arc SDE, ESRI Arc IMS, ESRI Arc Info

DAS Data Center Overview

■ Technology (Continued)

- Microsoft systems include Dell/IBM/Compaq Servers comprising 220+ servers, including 1550s, 2550s, DL 360s, 380s, 580s, MS-A 1000s xSeries 440, security, high availability, redundancy and current patch levels are our standards; IBM x440, 4 CPU 1.6 GHz, 4 GB RAM, 9 Virtual Machines.
 - OS Microsoft NT Server 4.0
 - OS Microsoft 2000 & Advanced Server
 - Microsoft Cluster Services
 - Microsoft SQL Server 7; Microsoft SQL 2000
 - Microsoft Exchange 5.5; Microsoft Exchange 2000
 - Microsoft ComVault 4.2 & StorageTek E-Mail Archival Solution.
 - ISA Proxy
 - Cold Fusion v. 5.5
 - Microsoft IIS 5
 - Veritas NetBackup, Veritas Backup Exec,

DAS Data Center Overview

- Technology (Continued)
 - Security
 - Nokia firewalls with Checkpoint software, 8 pairs
 - Open SSH, Snort, Tripwire
 - RACF
 - Connectivity
 - F5 BIG-IP load balancing switches
 - McData Fiber Director
 - Cisco Switches
 - TCP/IP, SDSF
 - IBM 3745, (3) IBM 3174's, (2) IBM 2074 console controllers

DAS Data Center Overview

- Technology (Continued)
 - Storage
 - Hitachi 7700E, 300 GB allocated to Unix systems; 3 TB allocated to mainframe
 - Hitachi 9960E, 3.9 TB allocated to Unix and Microsoft systems; 3 TB allocated to mainframe
 - StorageTek Silo with (10) 9840's, and (4) 9490 timberline drives.
 - StorageTek Virtual Tape Server with 180 GB Storage.
 - FDR/ABR, Syncsort
 - (2) IBM 3480 Tape Drives
 - MSA 1000, 4TB allocated to Microsoft Systems

DAS Data Center Overview

- Facilities
 - Approximately 3800 square feet (85% occupied), UPS/generator system shared with ODOT (near 90% capacity), HVAC near capacity.
- Technology Direction
 - LPAR/Grid capability on mainframe, mid-range, and Microsoft platforms
 - Server consolidation
 - Common SAN architecture for all platforms
 - Centralized storage management architecture

Network Overview

Stephen Macartney, Enterprise Network Services
Information Resources Management Division
Department of Administrative Services

Network Overview: State Data Networks

- State Government currently has 14 OSI Layer 3 Networks.
- All 14 networks and K-12 purchase OSI Layer 2 connections from a DAS contract with Qwest. All agencies connect to the ENS Network for interconnections and Internet Transit.
- 11 of these 14 networks are considered as potential targets for consolidation.
- These 11 networks total 5017 sites including approx. 3500 POS sites; the remainder are in approx. 800 agency offices.
- There are 130 sites in the state that have multiple agencies in the same building with separate data services resulting in bandwidth inefficiencies.

Network Overview: State Data Networks

- Lottery uses FRADS for their POS system. All other agency remotes utilize routers.
- Larger agencies manage their own networks with internal staff and resources.
- Networks consist primarily of leased circuits connecting agency locations to communications hub(s).
- On the Salem campus a state-owned fiber MAN is used to deliver services.
- An OC-12 is leased between Salem-Portland-Bend-Burns. This is shared among agencies.
- Three video networks; ENS, ODOT and K-12.

Network Overview

- DAS/IRMD: Enterprise Network Services (ENS)
 - Serves most smaller state agencies.
 - ENS manages and operates this network.
 - ENS manages remote offices for ODFW. ODFW manages their own POS system.
 - ENS network has 567 remote sites.
 - Provides connectivity between other state networks.
 - Provides Internet services to other state networks.
 - Distributed network core.
 - Internet mail gateway.

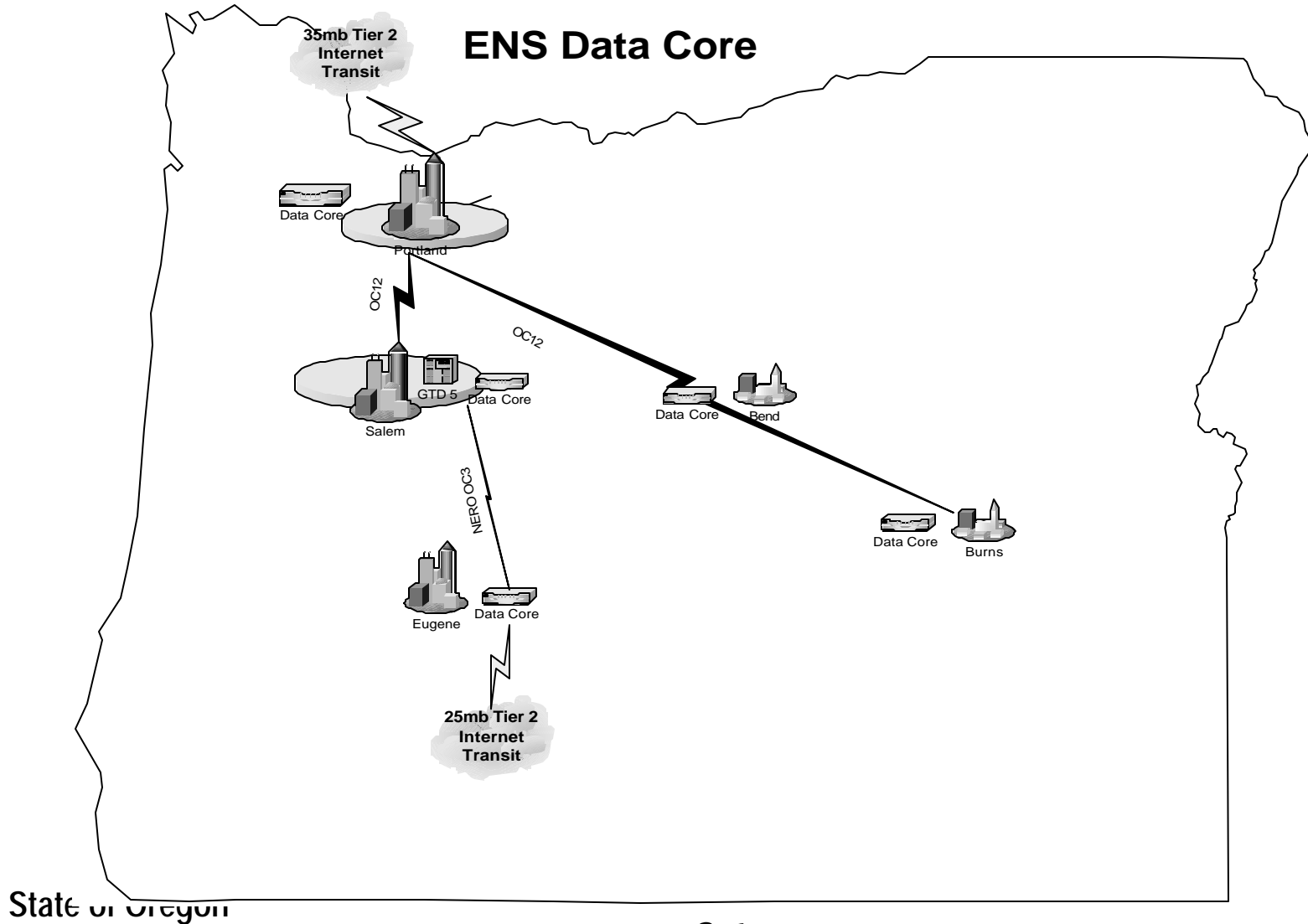
Network Overview

Organizations Number and Type of Data/Video Circuits

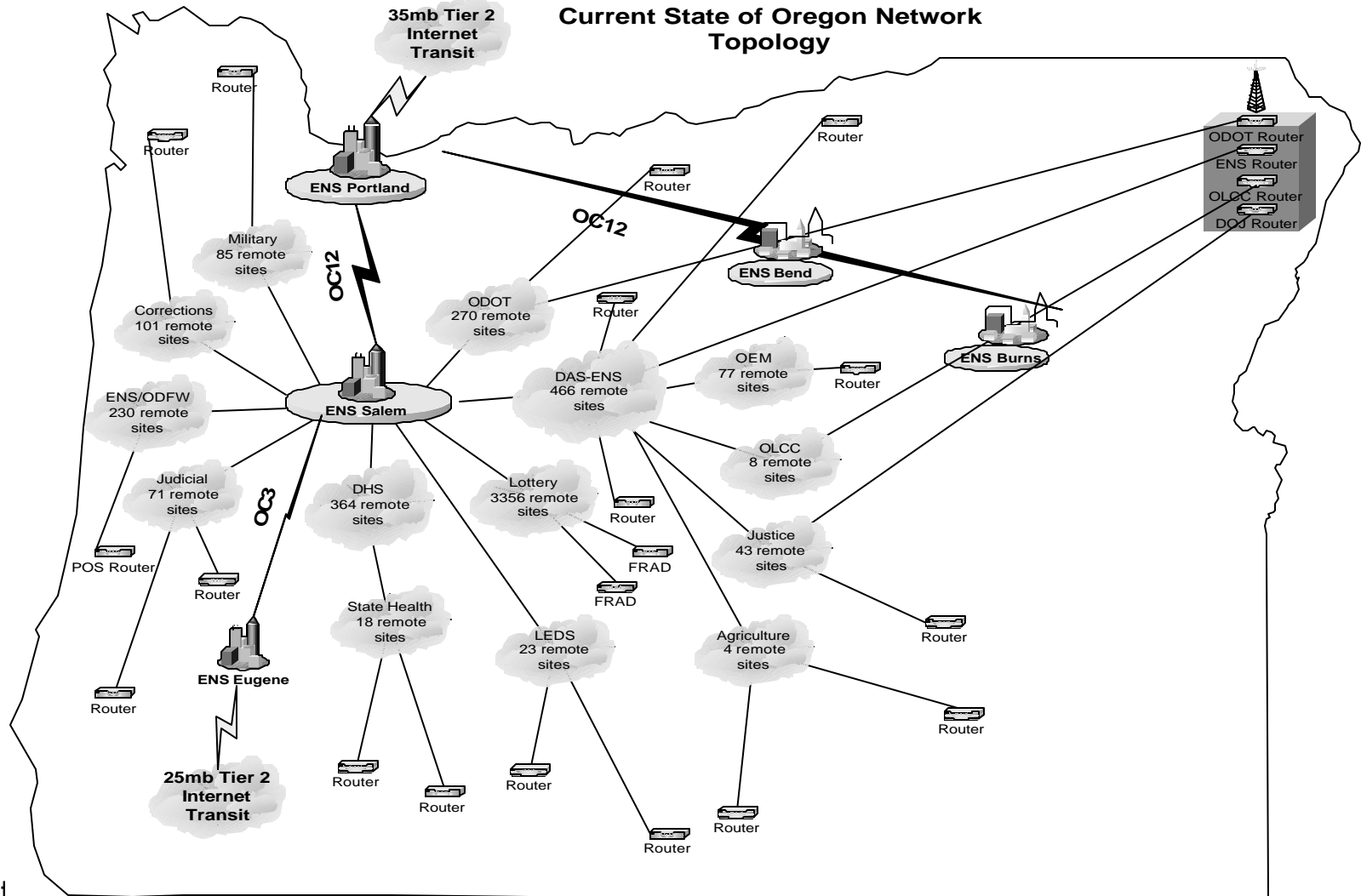
| | Agency | 56kb Frame Relay | T-1 Frame Relay | DS3 Frame Relay | 56kb Direct Digital | T-1 Direct Digital | DS3 Direct Digital | Total Circuits |
|---|-----------------|------------------------|-----------------------|-----------------------|---------------------------|-----------------------|--------------------------|-------------------|
| | Agriculture | | 3 | | | 1 | 0 | 4 |
| | Corrections | 18 | 68 | 0 | 4 | 11 | 0 | 101 |
| | DHS | 159 | 169 | 0 | 22 | 14 | 0 | 364 |
| | Fish & Wildlife | 229 | 0 | 0 | 0 | 0 | 0 | 229 |
| * | Health Division | 13 | 5 | 0 | 0 | 0 | 0 | 18 |
| | Judicial | 4 | 63 | 1 | 0 | 3 | 0 | 71 |
| | Justice | 2 | 23 | 0 | 7 | 11 | 0 | 43 |
| | LEDS | 23 | 0 | 0 | 0 | 0 | 0 | 23 |
| | Lottery | 3272 | 77 | 0 | 0 | 7 | 0 | 3356 |
| | Military | 28 | 56 | 0 | 0 | 1 | 0 | 85 |
| | ODOT | 92 | 151 | 2 | 3 | 22 | 0 | 270 |
| | OEM | 54 | 14 | 0 | 1 | 8 | 0 | 77 |
| | OLCC | 0 | 6 | 0 | 0 | 2 | 0 | 8 |
| | k-12 via OPEN | 81 | 324 | 0 | | | 0 | 405 |
| | DAS-ENS | 197 | 272 | 5 | 2 | 87 | 4 | 567 |
| | Totals | 4172 | 1231 | 8 | 39 | 167 | 4 | 5621 |

* Managed by "Oregon Child Development Coalition"

Network Overview



Network Overview



Network Overview

- Network Costs
 - Most data circuits are leased from a consortium of carriers under a contract with Qwest Communications.
 - Four years remain on the Qwest contract; rates are stabilized.
 - Data transport costs statewide are approx. \$1M/month.

Network Overview

- Billing
 - ENS bills agencies for data network circuits and related services.
 - Under state billing structure savings from data network consolidation would be passed on to agencies.
 - The costs of DAS IRMD Data & Video services are distributed almost entirely among agencies served by the ENS Network.

Network Overview

- Opportunities for Efficiencies
 - Economies of scale
 - Reduced redundancy
 - Centralized management
 - Reduced complexity
 - Consolidation of staff and facilities

Network Overview

Networking Infrastructure Consolidation Preliminary List of Participant Agencies Number and type of Data/Video Circuits

| | | 56kb Frame Relay | T-1 Frame Relay | DS3 Frame Relay | 56kb Direct Digital | T-1 Digital Direct **** | DS3 Direct Digital | Total Circuits |
|-----|--|------------------------|-----------------------|-----------------------|---------------------------|-------------------------------|--------------------------|-------------------|
| * | Department of Agriculture | 0 | 3 | 0 | 0 | 1 | 0 | 4 |
| | Department of Corrections | 18 | 68 | 0 | 4 | 11 | 0 | 101 |
| | Department of Human Services (DHS) | 159 | 169 | 0 | 22 | 14 | 0 | 364 |
| | Department of Fish and Wildlife | 238 | 11 | 0 | 0 | 0 | 0 | 249 |
| ** | DHS- Health Division | 13 | 5 | 0 | 0 | 0 | 0 | 18 |
| | Oregon State Police - LEADS | 23 | 0 | 0 | 0 | 0 | 0 | 23 |
| *** | Oregon State Lottery | 3272 | 77 | 0 | 0 | 7 | 0 | 3356 |
| | Department of Transportation | 92 | 151 | 2 | 3 | 22 | 0 | 270 |
| | Oregon State Police - OEM | 54 | 14 | 0 | 1 | 8 | 0 | 77 |
| | Oregon Liquor Control Commission | 0 | 6 | 0 | 0 | 2 | 0 | 8 |
| | Department of Administrative Services | 188 | 261 | 5 | 2 | 87 | 4 | 547 |
| | | | | | | | | |
| | Totals | 4057 | 765 | 7 | 32 | 152 | 4 | 5017 |

Frame Relay information taken from April 2001 Qwest Billing Data

* Note using the Fast Packet Contract

** Managed by "Oregon Child Development Coalition"

*** 39 T1 Salem Home Circuits and 38 T1 Bend fault tolerant circuits

**** There could be some voice T-1 mixed in these numbers.

RFP Key Task Areas: Overview

Sean McSpaden & Mark Matson
Department of Administrative Services

RFP Key Task Areas: Overview

PHASE I

- Planning and preparing for inventory
 - Research (what to inventory)
 - Prepare for Inventory (tools, training and inventory plan)
- Inventory
 - Role of state and vendor

RFP Key Task Areas: Overview

PHASE I (Continued)

- Alternatives analysis, Business Case and Implementation Strategy
 - State will select an alternative if business case warrants.
 - If Business case does not exist, close out the project
- Detailed Implementation plan, Cost/Benefit, schedule, and validated business case for selected alternative

RFP Key Task Areas: Overview

PHASE II

- Implement the detailed plan

Computing and Networking Infrastructure Consolidation RFP

Vendor Questions

Computing and Networking Infrastructure Consolidation RFP

**Thank you.
We look forward to receiving
your proposals.**