# Statewide High Speed Network

networkMaryland Advisory Group Meeting

September 18, 2007

Chesapeake College

Wye Mills, Maryland

# Meeting Agenda

- Welcome & Introductions
- Update from the Maryland Broadband Cooperative
- State of the Network
- Status of Project
- Other Business

# **Welcome**

- Introductions
- Gregory Urban – Director, networkMaryland
- Ellis Kitchen – State CIT
- Patrick Mitchell – General Manager, Maryland Broadband Cooperative
- Guests/Visitors
- Meeting Minutes Approval
  - July

- Patrick Mitchell

# Meeting Agenda

- Welcome & Introductions
- **State of the Network**
- Status of Project
- Financial Review
- Other Business

# **Operational Customers**

- 70 Subscribers today

- Circuit Breakdown
  - 77 ISP Circuits
  - 85 SwGI Circuits
  - 1155 Layer 2 Circuits
  - 10 VPN Connections

# Executive Branch

**Executive Branch**
**networkMaryland Subscribers as of September 17, 2007**

| Agency | Internet | SwGI | Layer 2 | |
|---|---|---|---|---|
| Treasurer | Internet | SwGI | Layer 2 | * |
| Comptroller | Internet | SwGI | Layer 2 | |
| Governor's Office | Internet | SwGI | Layer 2 | |
| Attorney General | Internet | SwGI | Layer 2 | |
| Secretary of State | Internet | SwGI | Layer 2 | |
| Aging | Internet | SwGI ** | Layer 2 | |
| Agriculture | Internet | SwGI | Layer 2 | |
| Budget & Management | Internet | SwGI | Layer 2 | |
| Business & Economic Development | Internet | SwGI | Layer 2 | * |
| Education | Internet | SwGI | Layer 2 | * |
| Environment | Internet | SwGI | Layer 2 | * |
| General Services | Internet | SwGI | Layer 2 | * |
| Health & Mental Hygiene | Internet | SwGI | Layer 2 | * |
| Housing & Community Development | Internet | SwGI | Layer 2 | |
| Human Resources | Internet | SwGI | Layer 2 | * |
| Juvenile Services | Internet | SwGI | Layer 2 | * |
| Labor, Licensing & Regulation | Internet | SwGI | Layer 2 | * |
| Natural Resources | Internet | SwGI | Layer 2 | * |
| Planning | Internet | SwGI | Layer 2 | |
| Public Safety Correctional Services | Internet | SwGI | Layer 2 | * |
| State Police | Internet | SwGI | Layer 2 | * |
| Transportation | Internet | SwGI | Layer 2 | * |
| Veteran's Affairs | Internet | SwGI | Layer 2 | |

Legend:

Agency is Not Receiving networkMaryland Service - A Cost Savings exists if networkMaryland provides service

Agency Expressed Interest in Receiving networkMaryland Service

Agency is in Process of Receiving networkMaryland Service (JCR submitted)

Agency is Receiving networkMaryland Service

Size of Agency is small and does not realize a significant cost savings by connecting to networkMaryland or the service is not required

* networkMaryland Provisioning has been completed, Department is is process of migrating to service
** Agency is receiving networkMaryland service through parent, primary agency
✱ - denotes a change in service since the last Advisory Group Meeting

# Non-Executive Branch

**Non-Executive Branch**
**networkMaryland Subscribers as of September 17, 2007**

| Agency | Internet | SwGI | Layer 2 |
|---|---|---|---|
| Office of People's Council | Internet | SwGI | Layer 2 |
| Judiciary | Internet | SwGI | Layer 2 * |
| MD General Assembly | Internet | SwGI | Layer 2 |
| Office of Legislative Auditors | Internet | SwGI | Layer 2 |
| State Lottery | Internet | SwGI | Layer 2 * |
| State Board of Elections | Internet * | SwGI | Layer 2 |
| Maryland State Archives | Internet | SwGI | Layer 2 * |
| Department of Assessment and Taxation | Internet | SwGI | Layer 2 * |
| MIEMMS | Internet | SwGI | Layer 2 |
| Subsequent Injury Fund | Internet | SwGI | Layer 2 |
| Commission of Human Relations | Internet | SwGI | Layer 2 |
| Office for Children | Internet | SwGI | Layer 2 |
| Office of Public Defender | Internet | SwGI | Layer 2 * |
| Dept. of Rehabilitative Services | Internet ** | SwGI ** | Layer 2 |
| Dept. of Military | Internet | SwGI | Layer 2 |
| Workers' Compensation Commission | Internet * | SwGI * | Layer 2 * |
| State Retirement Agency | Internet | SwGI | Layer 2 |
| Maryland State Retirement Plan | Internet | SwGI | Layer 2 |
| MD Auto Insurance Fund | Internet | SwGI | Layer 2 |
| State Board of Contract Appeals | Internet | SwGI | Layer 2 |
| MD Higher Education Commission | Internet | SwGI | Layer 2 |
| College Savings Plans of Maryland | Internet | SwGI | Layer 2 |
| Office of Crime Control & Prevention | Internet | SwGI | Layer 2 |
| Maryland Emergency Management Agency | Internet * | SwGI | Layer 2 |
| MD Stadium Authority | Internet | SwGI | Layer 2 |
| Public Service Commission | Internet | SwGI | Layer 2 |
| Office of Admin Hearings | Internet | SwGI | Layer 2 |
| MD Insurance Administration | Internet | SwGI | Layer 2 |
| Office of State Prosecutor | Internet | SwGI | Layer 2 |

**Legend:**

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# Non-State Customers

Non-State entities\Counties\Municipalities
networkMaryland Subscribers as of September 17, 2007

| Baltimore City | Internet |
| | SwGI |
| | Layer 2 |

| Baltimore City State's Attorney Office | Internet |
| | SwGI |
| | Layer 2 |

| Baltimore City Community College | Internet |
| | SwGI |
| | Layer 2 |

| College of Southern MD | Internet |
| | SwGI |
| | Layer 2 |

| MD Public TV (MPT) | Internet |
| | SwGI |
| | Layer 2 |

| Charles County Government | Internet | * |
| | SwGI |
| | Layer 2 |

| Carroll County Gov't | Internet | * |
| | SwGI |
| | Layer 2 |

| Caroline County Gov't | Internet |
| | SwGI |
| | Layer 2 |

| Ocean City Gov't | Internet |
| | SwGI |
| | Layer 2 |

| Garrett County Gov't | Internet |
| | SwGI |
| | Layer 2 |

| University System of Maryland | Internet |
| | SwGI |
| | Layer 2 |

| Maryland School for the Deaf | Internet |
| | SwGI |
| | Layer 2 |

| Alleghany County Board of Education | Internet |
| | SwGI |
| | Layer 2 |

| Anne Arundel County Government | Internet | * |
| | SwGI |
| | Layer 2 |

| St. Mary's County Gov't | Internet |
| | SwGI |
| | Layer 2 |

| City of Laurel Gov't | Internet |
| | SwGI | * |
| | Layer 2 |

| MD Environmental Service | Internet |
| | SwGI | * |
| | Layer 2 |

| Frederick County Government | Internet |
| | SwGI | * |
| | Layer 2 |

| Montgomery County Government | Internet |
| | SwGI |
| | Layer 2 |

| Prince Georges County Government | Internet |
| | SwGI |
| | Layer 2 |

| Howard County Government | Internet | * |
| | SwGI |
| | Layer 2 |

| CAPWIN | Internet |
| | SwGI |
| | Layer 2 |

| Washington County (BWA) | Internet |
| | SwGI | * |
| | Layer 2 |

| NCRnet | Internet |
| | SwGI |
| | Layer 2 |

Legend:

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# Operations

- Internal Operations and Support
  - Successfully worked on trade-ins of legacy network equipment for reduced pricing on new network equipment
  - HVAC maintenance and compressor replacement at UMCP
  - Supporting various maintenance tasks that are related to the backbone migration from ATM to MPLS
- DNS servers: software setup underway
- Upgraded Archive's L2 connection between Hall of Records and UMBC from 100 Mbps to 200 Mbps
- Purchased Kiwi Syslog software for firewall logging

# **Operations**

- Consulting Services Engagements
  - Supported MEMA on their network requirements for their WebEOC Application
    - WebEOC Statewide Exercise held August 1, 2007
    - Towson University hosted MEMA's EMA application
    - Internet bandwidth to both providers peaked at 80% throughout the exercise
  - Assisting DPSCS in turning up networkMaryland on-net connections
  - Assist OPD in turning up networkMaryland on-net connections
  - Assist WCC in migrating their connections at HQ from a leased line to fiber

# **Customer Provisioning**

- 50 circuits are currently in the customer's testing/implementation phase

- 13 new circuits have been provisioned since the last meeting

- 19 circuits have been accepted by the customer since the last meeting
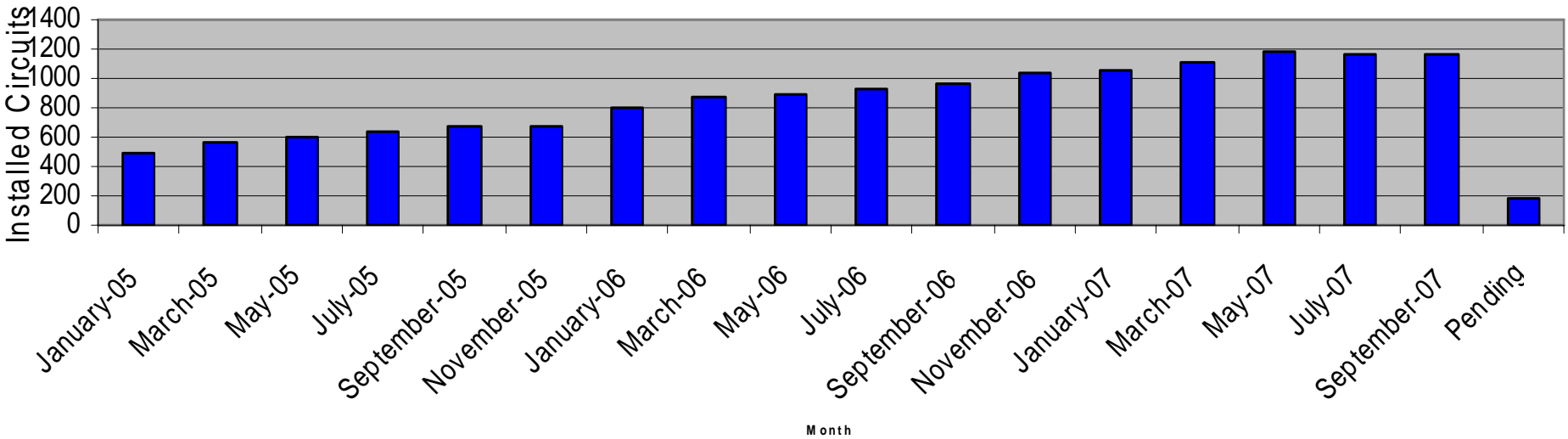
# New Customers

- Baltimore County Government – Towson POP (in progress)
- Washington County Government – Hagerstown
- MSDE – new connection from HQ to Gaithersburg
- Caroline County – ISP & SwGI

# Installed Circuits



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# Project Status

- DWDM Ring (Partnership with USM, MDOT)
  - Project Completed
  - An additional wavelength was provisioned for networkMaryland

- Elkton SONET POP
  - Project Competed in August
  - Now part of the UPSR ring: Baltimore-JFK-Elkton

# **Project Status**

- Towson POP
  - Baltimore County completed fiber route to County Data Center
  - PMP in development
  - networkMaryland awaiting fiber allocation
  - No ATM will be deployed at this POP

- Salisbury MSC
  - Initially connect to network via leased line
  - PMP is in development
  - DS3 clear channel circuit (to Easton) completed
  - No ATM will be deployed at this POP

# Project Status

- Denton MAN
  - Connects subscribers to the Eastern Shore microwave backbone
  - Install equipment in 7 buildings in Denton
  - Serve 17 agency connections
  - Connection to County Data Center established
  - Engineering design and overall layout completed
  - PMP and parts lists approved
  - Procurement completed and parts have arrived

# Project Status

- Cambridge MAN
    - Resource Share with Bay Country Communications
    - Install equipment in 4 buildings in Cambridge
    - Serve 17 agency connections
    - PMP completed and approved
    - Procurement in progress
    - Fiber installation by Bay Country Communications in progress

# Project Status

- UMBC POP / Catonsville MSC
  - Connects to backbone @ UMCP and 6 St. Paul
  - Service State Archives connectivity between Annapolis and their backup datacenter located at UMBC
  - Fiber between UMBC and Catonsville MSC completed
  - Site surveyed and prep work completed at MSC
  - Potential termination point for microwave connection to Hagerstown

# Network Overview
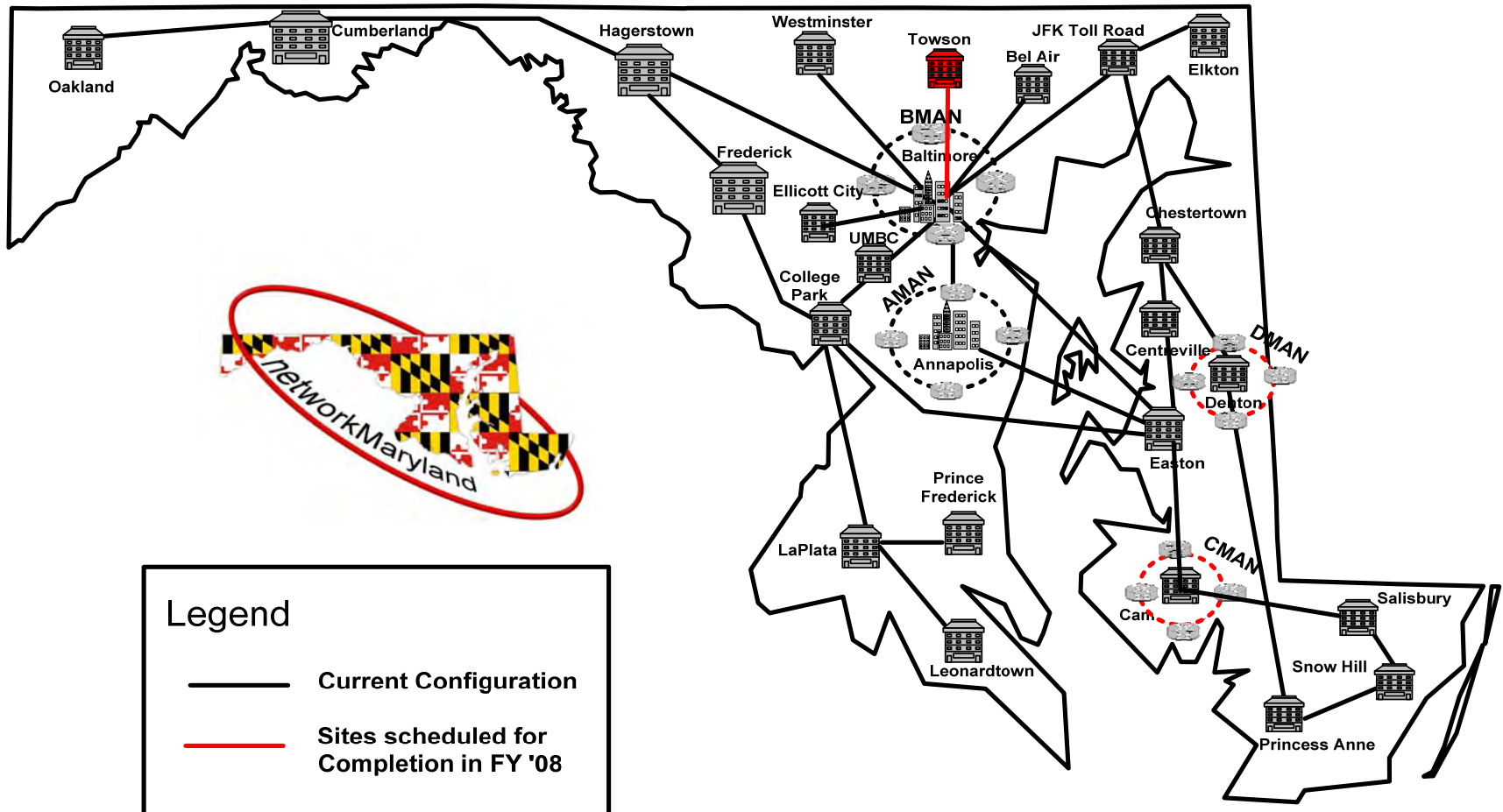
# Projects in Planning

- **Western Maryland Microwave**
  - Partnership with UMATS and Sailor
  - High Speed microwave from UMBC to Hagerstown
  - Provide redundant path out of Hagerstown
  - Allows the decommissioning of 3 Inter-LATA circuits

- **Washington County Connectivity**
  - MOU with WCPN
  - networkMaryland will establish POP in Hagerstown
  - WCPN will receive SWGI and Tower access
  - networkMaryland will receive last mile access to subscribers

# **Projects in Planning**

- Fiber Projects
  - Resource sharing agreement with Fibergate: Additional fiber in Montgomery County, Prince George's County, and to Fort Detrick.  Terms agreed upon and LPC letter drafted.

  - Frederick MAN: Add an additional POP in Frederick and build a diverse fiber path to the city.  Partnership with Frederick County Government.  Relies on Fibergate fiber.

  - Oakland MSC: Resource Share agreement to bring fiber from Oakland to backbone.

# Other Initiatives

- Evaluating various Last-Mile Access Solutions
  - Ethernet over TDM
    - Reduce costs for sites not directly attached to the backbone
    - Pilot project identified - Salisbury MSC
    - Hardware specifications to be finalized 9/21
  - Clear channel (non-ATM) access:
    - Provide greater than T1 bandwidth and support QoS
    - Support Ethernet handoff for non-MSC locations
    - Pilot project identified - MDOT Western LATA
    - Hardware specifications to be finalized 9/21

# Other Initiatives

- Working with agencies to update WAN architecture
  - MSP
  - DPSCS
  - MDOT
  - JUD/JIS

- Migration from ATM on the backbone
  - Updating AMAN in September
  - Core UMCP and 6 St. Paul links in October

# Other Initiatives

- **Rate Structure – FY 2009**
  - Utilizing input from ITAC survey performed earlier this year
  - Reduction in overall subscriber costs and bandwidth rates
  - Better alignment of costs and subscriber fees
    - Installation charges
    - Port charges
  - Introduction of new products and services
    - Non-ATM access
    - Ethernet hand-off
    - 1.5 Mbps – 12 Mbps access
  - "Straw Man" cost model build and being analyzed

# MEETING AGENDA

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# Other Business

- Items for discussion from the Group
  - Legislative and policy sub-committee (for discussion in September)
- Closing Questions or Comments

# Thank You

- Meeting Adjourned