

networkMaryland™ Advisory Group Meeting

January 17, 2012

Annapolis, MD



S T A T E O F M A R Y L A N D
D E P A R T M E N T O F I N F O R M A T I O N T E C H N O L O G Y



Meeting Agenda

- Welcome & Introductions
- New Business
- State of the Network
- Status of Project
- Other Business





Welcome

- Introductions
- Gregory Urban: Deputy State CIO - Operations
- Guests/Visitors





New Business

- Meeting Minutes Approval
 - October 2011
- Network Architecture Initiative
 - Better Support for Cloud Services



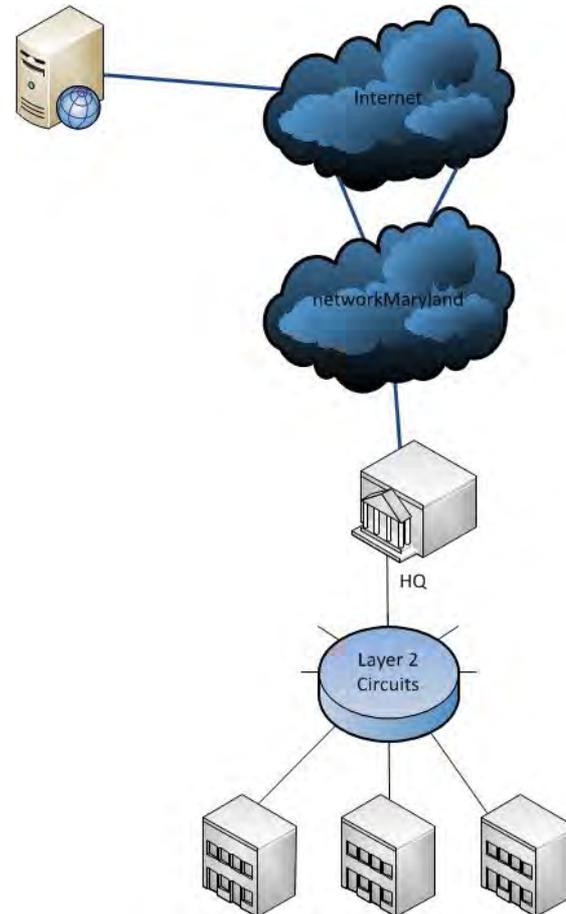


Supporting Cloud Services

Remote offices have Layer-2 circuits to HQ.

HQ has connection to Internet.

All Internet traffic, including to cloud services, goes through HQ.



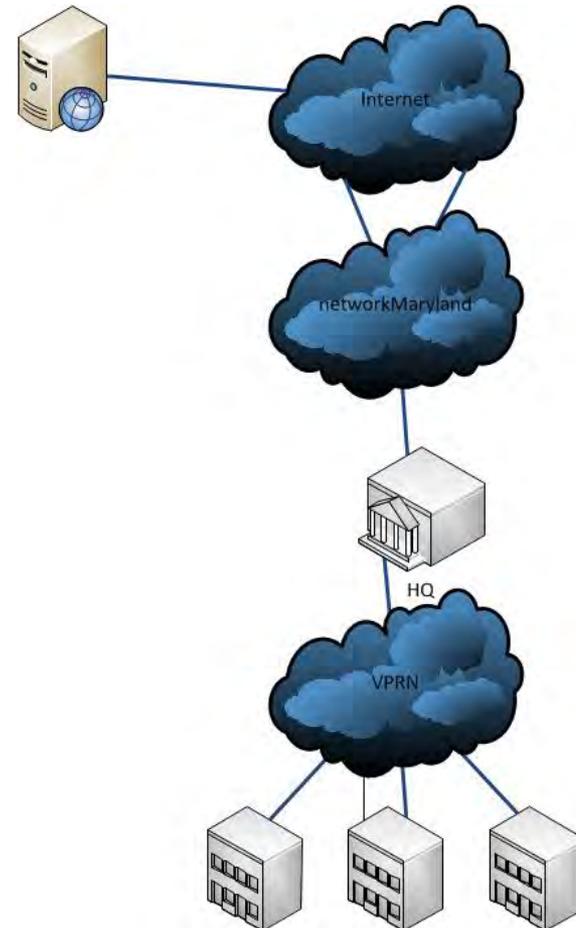


Supporting Cloud Services

All locations part of a private Layer-3 routing domain.

HQ has connection to Internet.

All Internet traffic, including to cloud services, goes through HQ.



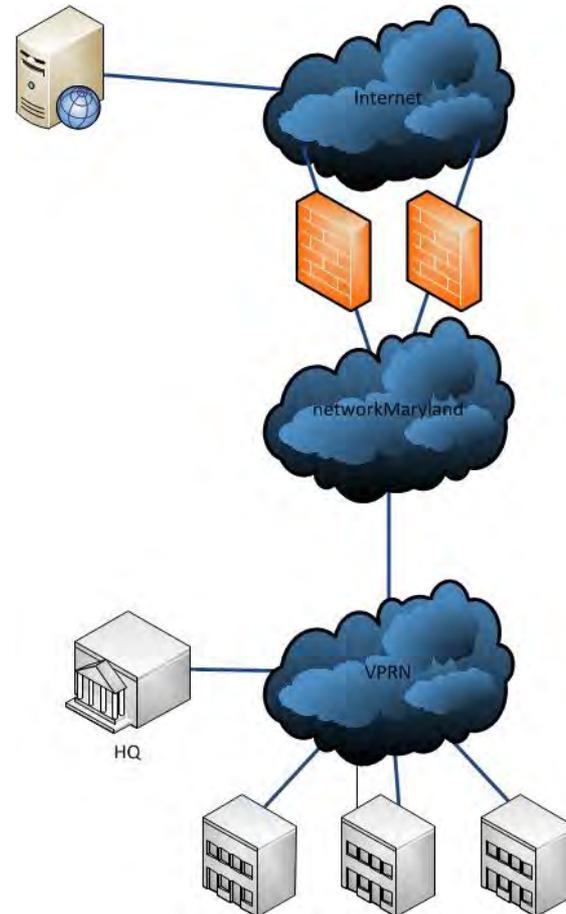


Supporting Cloud Services

All locations part of a private Layer-3 routing domain.

Remote locations can go directly to cloud services without going through HQ.

networkMaryland provides firewalls for use at Internet peering points. These can be used to control all Internet traffic or specific cloud provided traffic.





Supporting Cloud Services

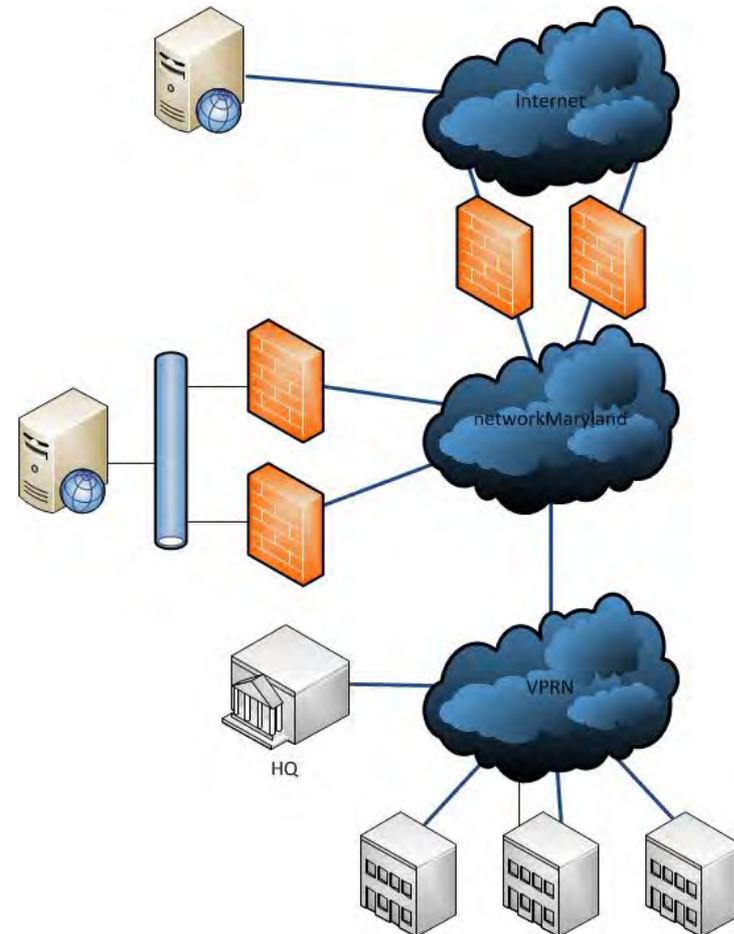
All locations part of a private Layer-3 routing domain.

Remote locations can go directly to cloud services without going through HQ.

networkMaryland “peers” with Cloud provider

networkMaryland provides firewalls for use at peering points. These can be used to control specific cloud provided traffic.

Traffic to cloud provider does not count against Internet traffic limits.





New Business - ISP

- Rates reduced - bandwidth increased

Bandwidth (Mbps)	Cost/Month	NRC	Cost/Mbps
10	\$ 150.00	\$ -	\$ 15.00
15	\$ 225.00	\$ -	\$ 15.00
20	\$ 300.00	\$ -	\$ 15.00
25	\$ 375.00	\$ -	\$ 15.00
50	\$ 725.00	\$ -	\$ 14.50
75	\$ 1,050.00	\$ -	\$ 14.00
100	\$ 1,300.00	\$ -	\$ 13.00
150	\$ 1,875.00	\$ -	\$ 12.50
200	\$ 2,400.00	\$ -	\$ 12.00
300	\$ 3,450.00		\$ 11.50
400	\$ 4,400.00		\$ 11.00
500	\$ 5,250.00		\$ 10.50
600	\$ 6,000.00		\$ 10.00
700	\$ 6,650.00		\$ 9.50
800	\$ 7,200.00		\$ 9.00
900	\$ 7,650.00		\$ 8.50
1000	\$ 8,000.00		\$ 8.00





New Business - Bundles

Bundles : ISP + SWGI / OMBN

100Mbps ISP : 100Mbps SWGI/OMBN

isp-00100		100 Mbps ISP
swgi-00100		100 Mbps SWGI / OMBN
	\$ 20,000 annual	

500Mbps ISP : 1000Mbps SWGI/OMBN

isp-00500		500 Mbps ISP
swgi-01000		1 Gbps SWGI / OMBN
	\$ 80,000 annual	

1000Mbps ISP : 1000Mbps SWGI/OMBN

isp-01000		1 Gbps ISP
swgi-01000		1 Gbps SWGI / OMBN
	\$112,000 annual	





New Business - Intranet

- Intranet (SwGI / OMBN)
 - Only two tiers

Statewide Government Intranet (SWG I) / One Maryland Broadband Network (OMB N)

Bandwidth (Mbps)	Cost/Month	NRC	Cost/Mbps
100	\$ 400.00	\$ -	\$ 4.00
1000	\$ 2,000.00	\$ -	\$ 2.00





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Operational Subscribers

- 80 Operational Subscribers – no new subscribers
- Circuit Breakdown
 - 91 ISP Circuits (+1)
 - 90 SwGI Circuits (+1)
 - 1405 Layer 2 Circuits (+30)
 - 13 VPN Subscriber Connections (+1)
 - 43 VPRN Circuits (+7)
 - 333 EE Circuits (+70)



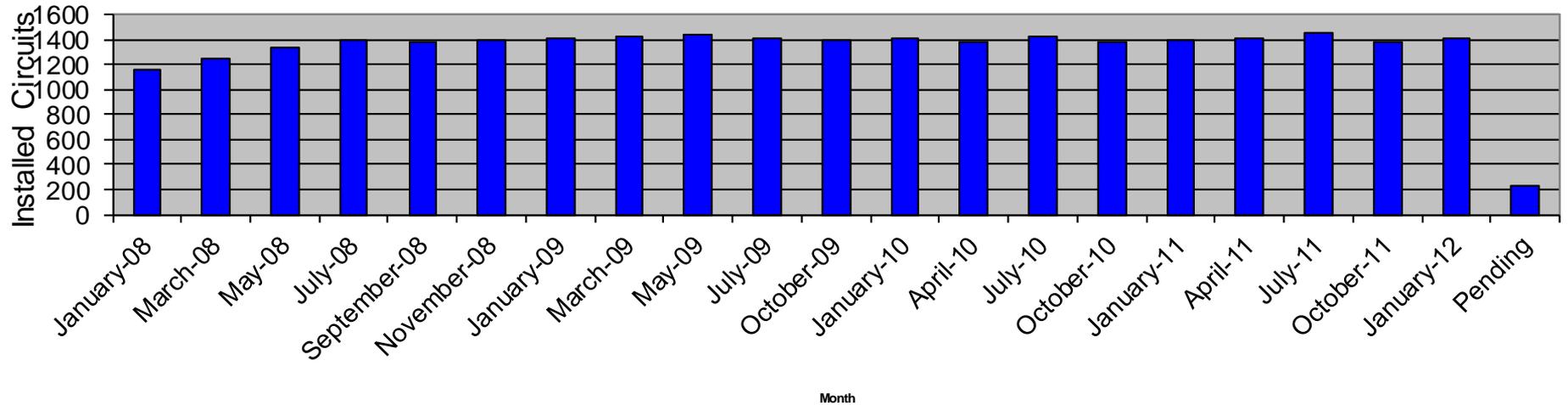


Subscriber Provisioning

- 101 Provisioning requests were received.
- 232 Cumulative active provisioning requests are in process.
- 94 tickets were completed (Customer Acceptance Form sent to customer).
- Of the 94 completed tickets, 86 were accepted/closed.



Installed Circuits





Executive Branch

Executive Branch
networkMaryland Subscribers
as of January 17, 2012

Treasurer	Internet SwGI Layer 2 EE	Comptroller	Internet SwGI Layer 2 EE *	Governor's Office	Internet SwGI Layer 2 EE	Attorney General	Internet SwGI Layer 2 EE *	Secretary of State	Internet SwGI Layer 2 EE
Environment	Internet SwGI Layer 2 EE	Agriculture	Internet SwGI Layer 2 EE *	Budget & Management	Internet SwGI Layer 2 EE	Business & Economic Development	Internet SwGI Layer 2 EE *	Education	Internet SwGI Layer 2 EE *
Information Technology	Internet SwGI Layer 2 EE *	General Services	Internet SwGI Layer 2 EE	Health & Mental Hygiene	Internet SwGI Layer 2 EE *	Housing & Community Development	Internet SwGI Layer 2 EE	Human Resources	Internet SwGI Layer 2 EE *
		Juvenile Services	Internet SwGI Layer 2 EE *	Labor, Licensing & Regulation	Internet SwGI Layer 2 EE *	Natural Resources	Internet SwGI Layer 2 EE	Planning	Internet SwGI Layer 2 EE
		Public Safety Correctional Services	Internet SwGI Layer 2 EE *	State Police	Internet SwGI Layer 2 EE *	Transportation	Internet SwGI Layer 2 EE *	Veteran's Affairs	Internet SwGI Layer 2 EE
								Maryland Energy Admin.	Internet SwGI Layer 2 EE *
								Maryland Coordination & Analysis Center	Internet SwGI Layer 2 EE

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 in 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 January 17, 2012

Office of People's Council	Internet SwGl Layer 2 EE	Judiciary	Internet SwGl Layer 2 EE	MD General Assembly	Internet SwGl Layer 2 EE	Office of Legislative Auditors	Internet SwGl Layer 2 EE	State Lottery	Internet SwGl Layer 2 EE
State Board of Elections	Internet SwGl Layer 2 EE	Maryland State Archives	Internet SwGl Layer 2 EE	Department of Assessment and Taxation	Internet SwGl Layer 2 EE *	MIEMMS	Internet SwGl Layer 2 EE	Subsequent Injury Fund	Internet SwGl Layer 2 EE *
Commission of Human Relations	Internet SwGl Layer 2 EE	Office for Children	Internet SwGl Layer 2 EE	Office of Public Defender	Internet SwGl Layer 2 EE	Dept. of Rehabilitative Services	Internet ** Layer 2 SwGl** EE	Dept. of Military	Internet SwGl Layer 2 EE
Workers' Compensation Commission	Internet SwGl Layer 2 EE	State Retirement Agency	Internet SwGl Layer 2 EE *	Maryland State Retirement Plan	Internet SwGl Layer 2 EE	MD Auto Insurance Fund	Internet SwGl Layer 2 EE	State Board of Contract Appeals	Internet SwGl Layer 2 EE
MD Higher Education Commission	Internet SwGl Layer 2 EE *	College Savings Plans of Maryland	Internet SwGl Layer 2 EE	Office of Crime Control & Prevention	Internet SwGl Layer 2 EE	Maryland Emergency Management Agency	Internet SwGl Layer 2 EE *	MD Stadium Authority	Internet SwGl Layer 2 EE
Legend: 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		Register of Wills	Internet SwGl Layer 2 EE	Office of Admin Hearings	Internet SwGl Layer 2 EE	Canal Place Authority	Internet SwGl Layer 2 EE		
* networkMaryland Provisioning has been completed, Department is in 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		Public Service Commission	Internet SwGl Layer 2 EE	MD Insurance Administration	Internet SwGl Layer 2 EE	Office of State Prosecutor	Internet SwGl Layer 2 EE		



Non-State Customers

Non-State entities\Counties\Municipalities
networkMaryland Subscribers as of January 17, 2012

Baltimore City	Internet SwGI Layer 2 EE	Charles County Government	Internet SwGI Layer 2 EE	MD Public TV (MPT)	Internet SwGI Layer 2 EE	University System of Maryland	Internet SwGI Layer 2 EE	Frederick County Government	Internet SwGI Layer 2 EE
Baltimore City State's Attorney Office	Internet SwGI Layer 2 EE	Carroll County Gov't	Internet SwGI Layer 2 EE	Garrett County Public Schools	Internet SwGI Layer 2 EE	Alleghany County Board of Education	Internet SwGI Layer 2 EE	Prince Georges County Government	Internet SwGI Layer 2 EE
Baltimore City Community College	Internet SwGI Layer 2 EE	Caroline County Gov't	Internet SwGI Layer 2 EE	St. Mary's County Gov't	Internet SwGI Layer 2 EE	Anne Arundel County Government	Internet SwGI Layer 2 EE	Howard County Government	Internet SwGI Layer 2 EE
Baltimore County Government	Internet SwGI Layer 2 EE	Ocean City Gov't	Internet SwGI Layer 2 EE	City of Laurel Gov't	Internet SwGI Layer 2 EE	City of Annapolis Gov't	Internet SwGI Layer 2 EE	Harford County Gov't	Internet SwGI Layer 2 EE
Maryland School for the Deaf	Internet SwGI Layer 2 EE	Montgomery County Government	Internet SwGI Layer 2 EE	CAPWIN	Internet SwGI Layer 2 EE	College of Southern MD	Internet SwGI Layer 2 EE	Washington County (BWA)	Internet SwGI Layer 2 EE
						Garrett County Government	Internet SwGI Layer 2 EE	Washington County Public Network (WCPN)	Internet SwGI Layer 2 EE
						Wicomico County	Internet SwGI Layer 2 EE	Baltimore City Police Department	Internet SwGI Layer 2 EE
						Frederick County Public Schools	Internet SwGI Layer 2 EE		

Legend:

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Service Level Performance

October 2011	1 - Critical	2 - High	3 - Normal
# of Cases Relating to Outages	6	79	22
Initial Response from Detection (10m, 10m, 10m)	6 100 %	79 100 %	21 95 %
Begin Diagnosis (10m, 10m, 10m)	6 100 %	79 100 %	22 100 %
Initial Notificaiton to State (10m, 10m, 10m)	100 %	100 %	100 %
# of Cases for Onsite Support with Parts	0	1	0
Onsite Support With Parts (4h, 4h, 24h)	0 100 %	0 0 %	0 100 %
Total # of Cases Included in Escalation SLA's (Not Approved for Exemption)	2	41	19
1st Escalation (20m, 4h, 24h)	2 100 %	41 100 %	18 95 %
2nd Escalation (1h, 4h, 24h)	2 100 %	41 100 %	19 100 %
3rd Escalation (1h, 4h, 24h)	2 100 %	41 100 %	19 100 %
Resolution Notification (10m, 10m, 10m)	100 %	100 %	100 %





Service Level Performance

November 2011	1 - Critical	2 - High	3 - Normal
# of Cases Relating to Outages	4	79	22
Initial Response from Detection (10m, 10m, 10m)	4 100 %	79 100 %	18 82 %
Begin Diagnosis (10m, 10m, 10m)	4 100 %	79 100 %	18 82 %
Initial Notificaiton to State (10m, 10m, 10m)	100 %	100 %	100 %
# of Cases for Onsite Support with Parts	0	0	0
Onsite Support With Parts (4h, 4h, 24h)	0 100 %	0 100 %	0 100 %
Total # of Cases Included in Escalation SLA's (Not Approved for Exemption)	3	38	18
1st Escalation (20m, 4h, 24h)	3 100 %	37 97 %	16 89 %
2nd Escalation (1h, 4h, 24h)	3 100 %	37 97 %	17 94 %
3rd Escalation (1h, 4h, 24h)	3 100 %	37 97 %	17 94 %
Resolution Notification (10m, 10m, 10m)	100 %	100 %	100 %





Service Level Performance

December 2011	1 - Critical	2 - High	3 - Normal
# of Cases Relating to Outages	11	65	19
Initial Response from Detection (10m, 10m, 10m)	11 100 %	65 100 %	18 95 %
Begin Diagnosis (10m, 10m, 10m)	11 100 %	65 100 %	18 95 %
Initial Notificaiton to State (10m, 10m, 10m)	100 %	100 %	100 %
# of Cases for Onsite Support with Parts	0	0	0
Onsite Support With Parts (4h, 4h, 24h)	0 100 %	0 100 %	0 100 %
Total # of Cases Included in Escalation SLA's (Not Approved for Exemption)	10	38	14
1st Escalation (20m, 4h, 24h)	6 60 %	37 97 %	12 86 %
2nd Escalation (1h, 4h, 24h)	8 80 %	37 97 %	13 93 %
3rd Escalation (1h, 4h, 24h)	10 100 %	37 97 %	13 93 %
Resolution Notification (10m, 10m, 10m)	100 %	100 %	100 %





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Project Status

- One Maryland Broadband Network
 - Received backbone hardware
 - Engineering work in ongoing statewide
 - Construction is underway in Calvert, Charles, and St. Mary's
 - Equipment installation started at UMCP
 - Equipment installation started at 6 St. Paul
 - Need Pole Attachment Agreements
 - Verizon: *completed*
 - BGE: *completed* – entities are signing individual agreements
 - Allegany Power : *completed*
 - Delmarva Power: *completed*





Project Status

- Migration from ATM to Native IP
 - Phase VI: Last Mile (FRASI Replacement)
 - In progress
 - Phase VII: Direct ATM Connections
 - In progress: DJS; DORS; DHR; MDOT; DHMH; WCC; DPSCS
- NCRnet
 - Established physical connection at UMCP
 - Working to connect State partners with NCRnet participants





Project Status

- Network Resiliency: Separate service delivery & core
 - Dedicated routers for upstream ISP connectivity: *completed*
 - Move Layer 3 terminations off core routers:
 - Incorporated as part of OMBN project
 - Migrate MANs from Layer 2 to Layer 3 connections
 - Incorporated as part of OMBN project
- Backbone Upgrade to 10Gbps: Full schedule being developed: schedule delivery February 2012
- Redundant fiber connecting Baltimore POPs: on hold





Project Status

- Deployment of multi-cast capabilities on SWGI
 - Final turn-up scheduled for first week of February
- Frederick MAN
 - Build a diverse fiber path through Frederick (no change)
- Cambridge MAN
 - District Courthouse and Dorchester County Office Building
- Initiate Eastern Shore Fiber Backbone project
 - 12 strands of fiber received from MdBC on entire shore
 - Princess Anne and Elkton next on the list





Fiber Projects

- Pikesville
 - **Compete: Migrating backbone circuits to our private fiber connection**
- Hagerstown: Fiber to DPSCS complex:
 - Part of OMBN project
- Rockville Courthouse
 - **Compete**
- Fiber documentation and mapping project
 - Level3 Backbone: To be completed by MdBC as part of Resource Share Agreement (2 years to complete)





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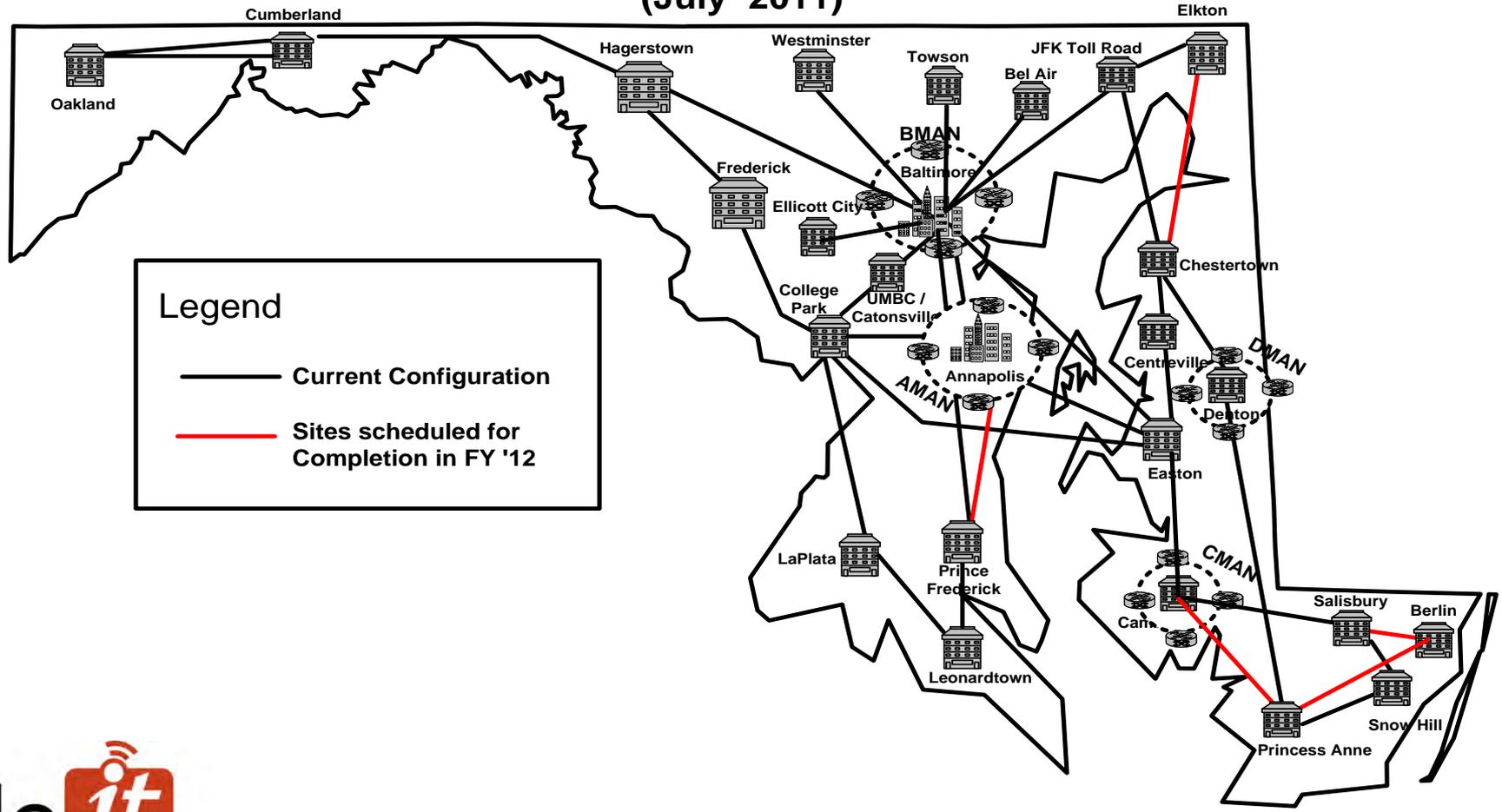
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Network Overview

(July 2011)



Legend

- Current Configuration
- Sites scheduled for Completion in FY '12





Other Business

- networkMaryland™ Engineering Committee meeting
 - Monday March 12th, 2011, 1:30 PM @ UMBC Technology Center
 - Merged with MDREN engineering meeting
- Closing Questions or Comments



Meeting Adjourned

