



INFORMATION TECHNOLOGY



2018-2020

STATE OF MONTANA
STRATEGIC
PLAN





This document is prepared under the authority of the Montana Information Technology Act of 2001.
It is published biennially unless special interim plans become necessary. ([2-17-512, MCA](#))

Ron Baldwin
Montana State Chief Information Officer
October 25, 2017



Montana Strategic Plans for Information Technology are on Montana's Official State Website:
MT.gov, State Information Technology Services Division at <http://sitsd.mt.gov/Governance/IT-Plans>.

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TABLE OF CONTENTS

DOCUMENT AUTHORITY	2
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TABLE OF CONTENTS	3
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ABOUT SITSD

Message from the CIO	4.1
Mission and Vision	4.2
IT Principles	4.3
Accomplishments	4.4

STRATEGIC GOALS

Secure	5.1
Shared	5.2
State-of-the-Art	5.3
Capacity	5.4
Capability	5.5
Cost-Effectiveness	5.6



A MESSAGE FROM THE CIO

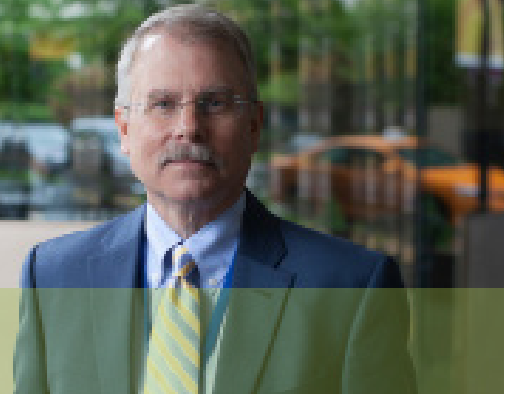


Photo Courtesy of David Kidd, e/Republic

MESSAGE
FROM CIO



MISSION

The mission of Information Technology is to provide secure state of the art IT services to support the needs of the citizens and the State of Montana.

VISION

State Information Technology has a vision of being an organization that focuses on:

- Customer Service
- State-of-the-Art
- Value-Added IT
- Security and data protection
- Cost-Effective

VALUES

Integrity – Do what is right, legally and morally

Honesty – Communicate and act truthfully

Accountability – Take responsibility for actions

Stewardship – Properly utilize the resources of the state

Respect – Treat people with dignity and value them as individuals



STATUTORIAL IT PRINCIPLES

The majority of Montana's IT principles have roots in Montana's Information Technology Act. IT principles govern the decisions and operations of the state's IT community. They provide touch-points and guidelines to ensure the correct decisions are being made, decisions that will provide the greatest value to Montana's citizens.

BE ACCOUNTABLE:

Resources and funding will be allocated to the IT projects that contribute the greatest net value and benefit to Montana stakeholders.

MINIMIZE DUPLICATION:

Unwarranted duplication will be minimized by sharing data, IT infrastructure, systems, applications and IT services.

SHARE OUR RESOURCES:

Montana will use shared platforms and systems to minimize IT expenditures, improve service delivery and accelerate service implementation.

IMPROVE BUSINESS:

IT will be used to provide educational opportunities, create quality jobs, a favorable business climate, improve government, protect individual privacy and protect the privacy of IT information.

USE RESOURCES WISELY:

IT resources will be used in an organized, deliberative and cost-effective manner.

DELIVER SERVICES:

IT systems will provide delivery channels that allow citizens to determine when, where and how they interact with state government.

PROTECT PRIVACY, DATA AND SYSTEMS:

Mitigation of risks is a priority for protecting individual privacy, confidential data and IT systems.



ACCOMPLISHMENTS

Governor Bullock's executive order for IT convergence resulted in the state's annual IT savings of over \$1.6 million dollars. The state has transferred 1,100 servers and 500TB of data to shared server and storage platforms.

ITMC and the state created the Enterprise Information Technology Financial Workgroup (EITFW) to provide feedback to SITSD management on planned service catalog changes.

The state implemented a Network Operations and Security Center (NOSC) to improve visibility of the state network. The NOSC proactively measures against cyber threats, and increases the uptime of the state network through incident resolution efficiencies.

Developed internal applications that are easily used on mobile devices and that the MDM web browser supports. The browser securely logs the device into the state network, so internal facing applications can be used.

The state uses agile methodology when:

- developing applications
- hosting applications
- developing application infrastructure
- developing databases
- hosting databases
- developing database infrastructure
- developing analytics.

We have a mobile first strategy in place, and develop all applications and websites using responsive design that are formatted primarily for mobile devices and secondarily for desktop devices.

The state transitioned to a new system for Montana's Open Data portal, data.mt.gov, that has superior qualities in data analytics and business intelligence.

The state implemented Mobile Device Management (MDM). MDM is a way to ensure employees stay productive and do not breach corporate policies or accidentally disclose sensitive information. The MDM deployment is configured as a multi-tenant environment so that each agency or branch can manage their own enrolled devices.

Implemented Multi-Factor Authentication (MFA) requiring users to know their password, and to have an ID token to log in to the secure network. This will reduce the chance that a hacker would gain access to the user's password and the physical token assigned to them.



ACCOMPLISHMENTS

The Health Care Data Warehouse contains claims and eligibility data for the state self-insured health plan and the Montana Unified School Trust health plan. All claim details are securely held separately, however, a website was created to house summary analytics data across the entire warehouse for decision making purposes.

Each customer also has their own application and website for administration and data analytics that supports their data warehouse. In the future, Medicaid claims will be added to this data warehouse.

The state implemented a data loss prevention (DLP) policy to comply with business standards and industry regulations. The state must protect sensitive information and prevent its inadvertent disclosure. DLP set on the state's email and file sharing systems identifies, monitors, and automatically protects sensitive information.

The state implemented advanced network readiness and troubleshooting tools that are running on the environment. We also implemented QoS (Quality of Service) code versioning issues.

The migration to an enterprise content management system is complete. This new system provides the state the ability to go completely paperless with Enterprise scanning and workflow features.

Governor Bullock signed an Executive Order to create the Montana Information Security Advisory Council (MT-ISAC) in June of 2015. The Governor appointed 15 members that represent state & local governments and the private sector. There are over 120 members. MT-ISAC has approved six state policies, and ten standards since August of 2015. Additionally, 28 security policies were rescinded and combined into one of the approved policies. In 2016, standards such as Hardening of Devices, Large & Small Incident Handling Steps, and Disposal of Media Storage all have been created to help State of Montana governments. Main Street Montana can also use these standards as guidelines. A workgroup dedicated for community outreach in cyber security created a webpage to help Main Street Montana strengthen their own cyber security posture.

The state deployed 2,500 VoIP phones in state offices on the Helena campus and remote offices. These new phones enabled advanced unified communication abilities.



Our strategic goals guide us as we evolve, and provide us with a clear vision of what we will accomplish. We continually evaluate enterprise information technology services through a formula of objectives to ensure that we implement value-added IT.

GOAL 1 • SECURE

ENHANCE INFORMATION SECURITY BY IMPLEMENTING STANDARDIZED BEST PRACTICES TO PROTECT SYSTEMS, ASSETS AND DATA IN A COST-EFFECTIVE MANNER.

Objective 1.1

Develop and implement security standards, common controls and best practices for information systems.

Objective 1.2

Enhance the enterprise information security training and awareness program.

Objective 1.3

Leverage the public-private partnerships established by the Montana Information Security Advisory Council (MT-ISAC) to enhance information sharing, outreach and risk awareness. This will help protect information systems across the state.

Objective 1.4

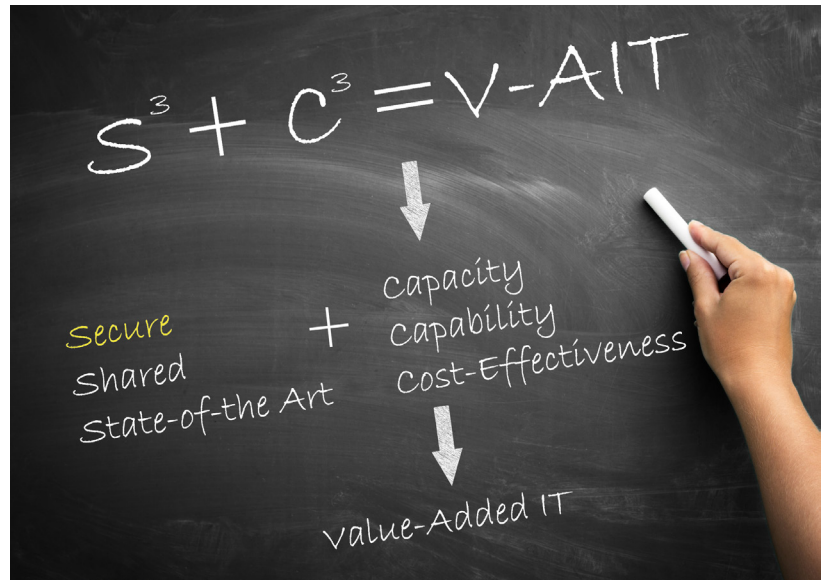
Develop the internal review and compliance program to provide data that proves efficient security controls or identifies security gaps to remediate.

Objective 1.5

Develop automated processes in continuous monitoring and risk management to identify threats, gain efficiencies and overcome resource limitations.

Objective 1.6

Perform a cybersecurity cost analysis for the State of Montana, which would include investment recommendations.



*Testimonial from
MT-ISAC member
coming from
Joe Frohlich*

STRATEGIC GOALS

GOAL 2 • SHARED

DESIGN AND OPERATE A SHARED AND MANAGED SERVICES ENVIRONMENT.

Objective 2.1

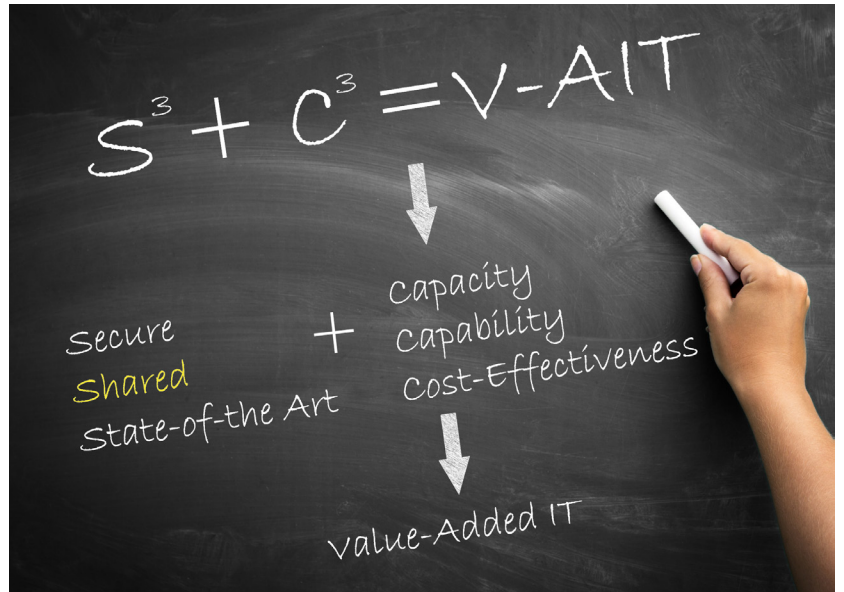
Expand agency abilities to manage users and devices within Enterprise shared platforms, including Multi-Factor Authentication and Mobile Device Management.

Objective 2.2

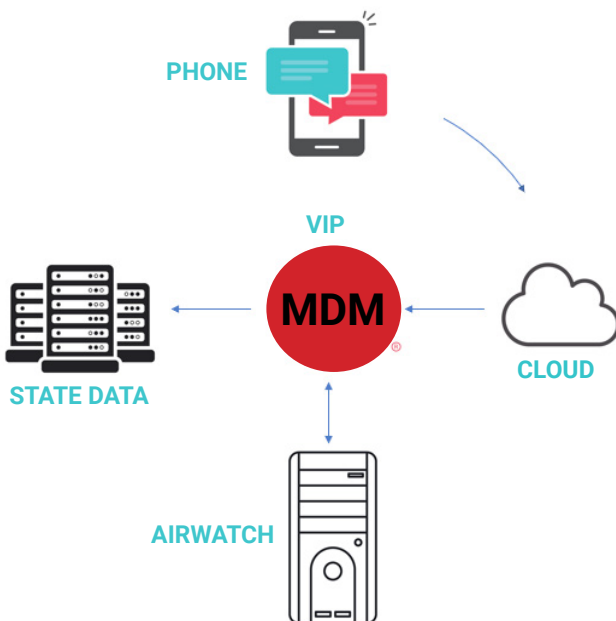
Implement Virtual Desktop Infrastructures (VDI) to decrease environmental impact and improve security.

Objective 2.3

Leverage and expand public-private partnerships to decrease the cost of state data center operations.



MOBILE DEVICE MANAGEMENT (MDM) TRAFFIC FLOW



"The Department of Revenue implemented RSA 2 Factor Authentication to all employees and contractors in the agency in 2014. RSA is an added layer of security for our computer network. Just like accessing an ATM where a user needs two forms of ID ...an ATM "card" and a "pin", DOR employees log in with their network "password" AND a "passcode" generated by a FOB issued to all employees. The implementation and use of this added layer of security in DOR has been a great success.

We also support and encourage the use of personal mobile devices for employees who use these devices to enhance productivity or who are required to use a mobile device in conjunction with their job duties. Using a personal mobile device is cost-effective and, through the use of Mobile Device Management (MDM), effectively secures State data and resources at the same time. Users are responsible for securing their personal mobile device so that others cannot use it inappropriately to access State data. MDM is required on all mobile devices that access State email. The utilization of state provided mobile device management has been successful in DOR."

-Tim Bottenfield, Chief Information Officer
Montana Department of Revenue



GOAL 3 • STATE-OF-THE-ART

DELIVER STATE-OF-THE-ART ENTERPRISE IT SERVICES TO STATE AND LOCAL GOVERNMENT, AND THE UNIVERSITY SYSTEM.

Objective 3.1

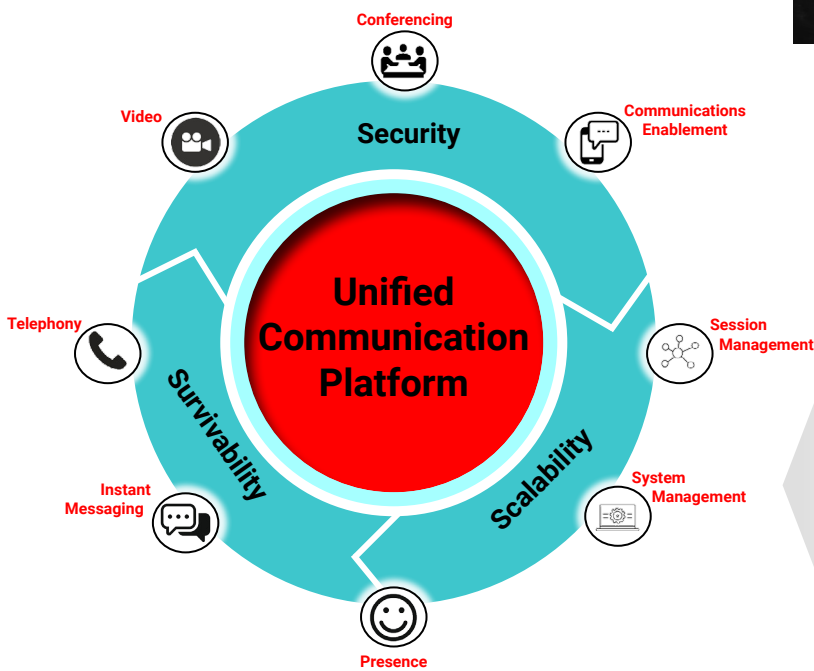
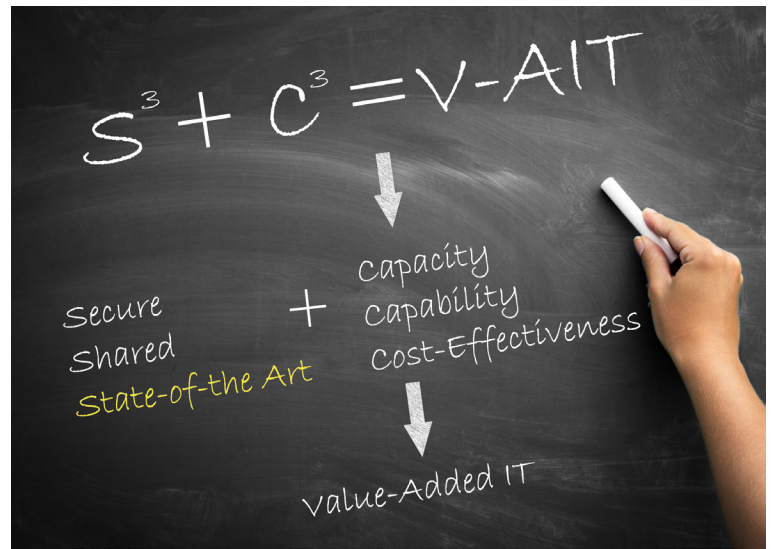
Leverage and deploy technologies that provide a modern experience for citizens and employees that access government data and services.

Objective 3.2

Implement up to 5,000 Virtual Desktop Infrastructures (VDI) to decrease environmental impact, and improve security.

Objective 3.3

Implement unified communication technologies to increase flexibility, mobility and productivity.



THE UNIFIED COMMUNICATION PLATFORM FOR THE STATE OF MONTANA

- Intuitive system management from a single web administrative interface
- Single number reach and user experience across Montana state offices, branches, and on the go
- Dynamic allocation of bandwidth across the enterprise
- Multilayer security from core to end points
- Complete Redundancy and Virtualization options
- Scalable to 350,000 endpoints. Reduced hardware footprint
- Simplified deployment of multimedia collaboration applications
- Integration into business applications and processes



GOAL 4 • CAPACITY

IMPLEMENT SCALABLE TECHNOLOGIES THAT MEET CUSTOMER DEMAND, FLEXIBLY AND RAPIDLY WITH MINIMAL CAPITAL EXPENDITURES.

Objective 4.1

Increase the use of load balancing, web application firewall (WAF), and the storage platform for redundancy, automatic failover, and failback. Continue to enhance our incident response and disaster recovery skills.

Objective 4.2

Create a workplace environment that promotes recruitment and retention.

Objective 4.3

Protect the systems the state hosts against the ever-increasing volume and sophistication of threats. Do this with state-of-the-art security tools. Continue to train state employees on security measures.

Objective 4.4

Use advanced tools that are accessible to the end-user to promote our business intelligence and data analytics.

Objective 4.5

Leverage the DevOps concept that emphasizes collaboration and communication. This will standardize application development, operation tools, and code development.

Objective 4.6

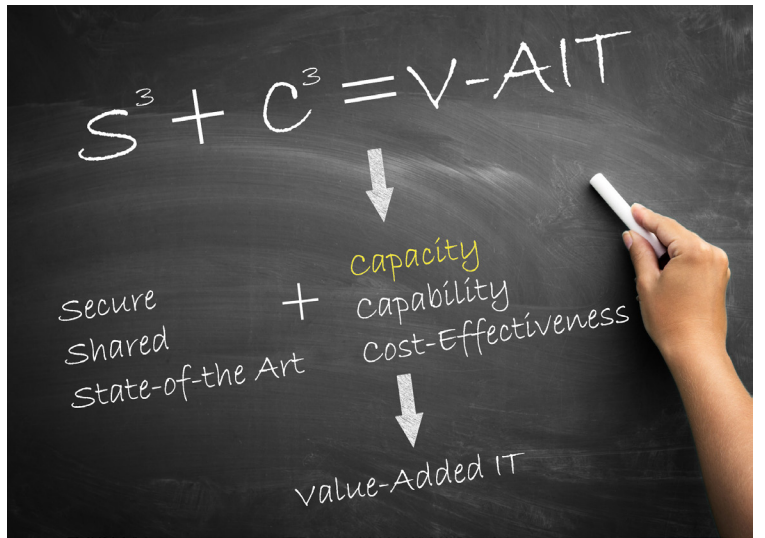
Promote enterprise content management and workflow solution to reduce the dependency on paper documents and manual processes.

Objective 4.7

Design and operate enterprise-class, on-demand storage and computing.

Objective 4.8

Implement scalable network circuit solutions that increase bandwidth while reducing costs and continue to increase network access and capacity into the state's data centers.



Objective 4.9

Provide an enterprise unified communications suite that allows for increased, more efficient communications among stakeholders to fulfill business-critical functions.

“The Montana State Library is one of the State’s smallest agencies but, given the digital nature of our collections, we have a very large IT footprint, which includes many 10’s of terabytes of data. We began to virtualize our IT architecture a number of years ago so we were well prepared to pick up and move our IT environment quickly when the IT Convergence order was signed. The economies of scale gained through the convergence made costs affordable and we hope that additional cost savings will continue to be realized. The IT environment is stable and reliable and is working well to serve the thousands of users who use our collections on a regular basis.”

**- Jennie Stapp
Montana State Librarian**



GOAL 5 • CAPABLE

DEPLOY CAPABLE TECHNOLOGIES THAT PROVIDE ESSENTIAL FUNCTIONALITY FOR A DIVERSE AND ENGAGING CUSTOMER BASE.

Objective 5.1

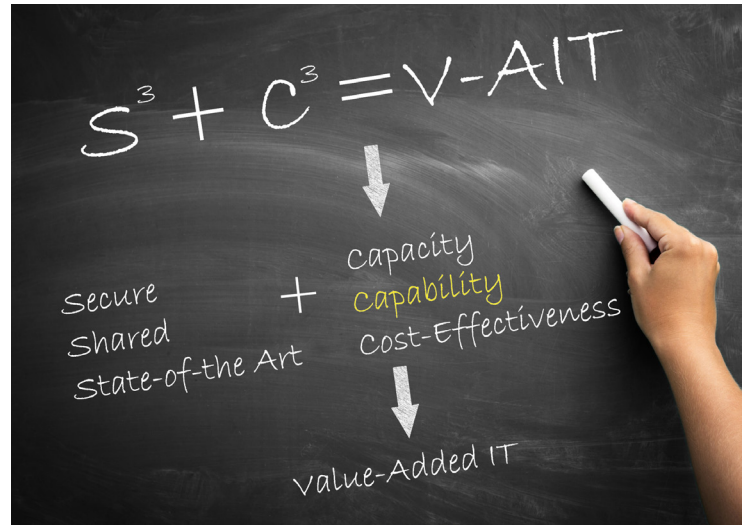
Implement phase one of Data Center Infrastructure Management (DCIM) to improve service-provided capabilities and show available capacity for future growth. Mapping the rack environments will show equipment locations, network and power sources and temperatures across the floor.

Objective 5.2

Facilitate and automate IT Service Management (ITSM) tool throughout our enterprise operations.

Objective 5.3

Design and deploy IT-based telephony to promote unified communications that allow users to communicate real-time across multiple platforms.



Objective 5.4

Continue to advance firewall technology that provides greater network security and flexibility.

Objective 5.5

Exceed business and capability requirements for enterprise services. Implement dashboards that provide real-time views into operations and performances.

Objective 5.6

Expand digital forensics capabilities to include multiple Open Source (OS) platforms, mobile, and network capabilities.

“IT convergence has positively affected the IT operations of DPHHS. The ability to quickly restore and recover services in the case of disaster with the type of equipment used by the enterprise platform is a great upgrade for DPHHS.

IT convergence gives DPHHS a great capability upgrade.”

*-Stuart Fuller, Chief Information Officer
Department of Health and Human Performance*



Montana Named the Most Notable State Government Program, Project or Initiative by Government Security News (GSN) Magazine

SITSD and the State of Montana won the Government Security News (GSN) 2016 Homeland Security award in the “Most Notable State Government Program, Project or Initiative” category.

Judging in this category was based on one or more of the following criteria:

- Development of successful strategy and increase in public safety
- Providing a notable solution to a recognized problem
- Reduction in cost and/or major increase in efficiency and effectiveness
- Decisive, successful action to respond to threat or emergency



GOAL 6 • COST-EFFECTIVENESS

LEVERAGE PUBLIC-PRIVATE PARTNERSHIPS TO DECREASE THE COST OF STATE DATA CENTER OPERATIONS

Objective 6.1

Enhance existing resources and identify new opportunities to provide additional shared services.

Objective 6.2

Deploy Software as a Service (SaaS) and Platform as a Service (PaaS) and existing systems over customized, ground-up solutions.

Objective 6.3

Continue to increase the energy, efficiency and utilization of the state's data centers.



GRAPHS, CHARTS OF
COST SAVINGS
BASED ON SERVICES
COMING FROM MATT

*State of Oregon
Data Storage
Testimonial
coming from
Brian Nealy*



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