

Storage Services  
Infrastructure Services

Backup Services

Support

Non-Profit

Disaster Recovery

Security Services

Florida Lambda Rail

Services

40-Years

Innovation

Colocation

Server

Cloud

Connectivity Technology

Cost Recovery

Data Center

NWRDC

Network Services

Mainframe

# Northwest Regional Data Center



Located in Tallahassee, Florida, NWRDC was founded in 1972 as one of four regional data centers serving State University System of Florida. We have been providing services for over 44 years.

Data Center  
**NWRDC**

# NWRDC: Who we are...

- ❖ A 100% not-for-profit auxiliary of FSU; no external state funding
- ❖ Provide services to universities, colleges, K12, as well as city, county, and state government entities
- ❖ NWRDC designed to be a state-of-the-art data center that can guarantee customers' security, accessibility and connectivity
- ❖ Reports to a Board of Directors comprised of our customers

# NWRDC Customers by Region

## Northwest

Holmes County School District, Bonifay  
Calhoun County School District, Blountstown  
Liberty County School District, Bristol  
PAEC, Chipley  
Washington County School District, Chipley  
Wakulla County School District, Crawfordville  
Walton County School District, DeFuniak Springs  
Franklin County School District, Eastpoint  
ELC of the Emerald Coast, Ft. Walton Beach  
Chipola College, Marianna

Santa Rosa County School District, Milton  
Jefferson County School District, Monticello  
Bay County School District, Panama City  
Escambia County School District, Pensacola  
Pensacola State College, Pensacola  
University of West Florida, Pensacola  
Gulf County School District, Port St. Joe  
Gadsden County School District, Quincy

Tallahassee:  
Florida Board of Governors  
Agency for State Technology  
Department of Business & Professional Regulation

Department of Education  
Department of Financial Services  
Department of Health  
Department of Highway Safety and Motor Vehicles  
Department of Insurance and Treasury  
Department of Revenue  
Department of State  
Florida Agricultural & Mechanical University  
FAMU Developmental Research School

Florida Center for Interactive Media  
Florida Office of Early Learning  
Florida State University  
Florida State University Schools  
FSU Facilities  
FSU Foundation  
FSU Health Services  
FSU Police Department  
Florida Virtual Schools  
Leon County Government  
Statewide Guardian ad Litem  
Tallahassee Memorial Health Care



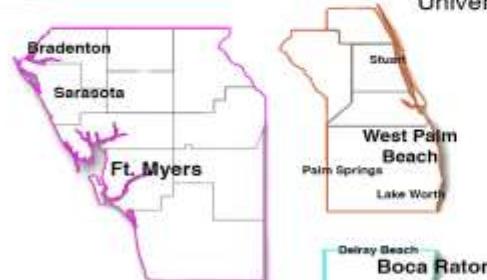
## West Central

Florida Polytechnic University, Lakeland  
Pinellas County School Board, Largo  
Hillsborough County Clerk of Courts, Tampa  
Hillsborough County School District, Tampa  
University of South Florida, Tampa  
Polk State College, Winter Haven



## Southwest

Manatee County Schools, Bradenton  
Florida Gulf Coast University, Ft. Myers  
Lee County School District, Ft. Myers  
New College of Florida, Sarasota  
Ringling Museum of Art, Sarasota



## South

A.D. Henderson University School, Boca Raton  
City of Boca Raton  
Florida Atlantic University, Boca Raton  
City of Delray Beach  
St. Thomas University, Miami  
Florida International University, Miami

## Northeast

Nassau County School District, Fernandina Beach  
Santa Fe College, Gainesville  
University of Florida, Gainesville  
City of Jacksonville  
Florida State College of Jacksonville  
University of North Florida, Jacksonville  
Florida Gateway College, Lake City  
Suwannee County School District, Live Oak  
Madison County School District, Madison  
Taylor County School District, Perry  
Bradford County School District, Starke  
Florida School for the Deaf and the Blind, St. Augustine  
St. Johns County School District, St. Augustine

## East Central

College of Central Florida, Ocala  
  
Orlando:  
Orange County Clerk of Courts  
Orange County Comptroller  
Orange County Government  
University of Central Florida

## Southeast

Palm Beach State College, Lake Worth  
Palm Beach County Health Care District, Palm Springs  
Martin County Government, Stuart

West Palm Beach:  
15th Judicial Circuit of Palm Beach County  
Palm Beach County Clerk and Comptroller  
Palm Beach County School District  
Palm Beach County Government

# NWRDC Toolkit of Services

- ❖ Server Hosting (Collocation and Disaster Recovery)
- ❖ Managed Services (systems support)
- ❖ Mainframe Hosting
- ❖ Infrastructure as a Service
- ❖ Storage\Backup as a Service
- ❖ Service Partners

# NWRDC Risk Management

NWRDC has been managing risk since its beginning; however, we have only recently formalized our risk management program by adopting a framework and formal process.

The objective was/is to capture, record, track and improve the risk management activities NWRDC already engages in, plus create a system that can identify new risks as they emerge.

# NWRDC Risk Management

Our program intends to identify strategic, operational, and cyber risks. Early in the process, NWRDC decided it would define its “current state risk” as being net of existing controls and mitigations. That meant starting to identify and assess risk based on the controls we already had in place, instead of starting at the beginning with gross risk and no controls in place.

# NWRDC Risk Management

Establish your risk definitions: What are we talking about when we talk about risk? Getting everyone in the organization speaking the same language about risk and risk-related concepts is very important. Don't assume that everyone is speaking the same language, even if it seems that way – start reading the risk literature and you'll see how many varying definitions of “risk” exist.

# NWRDC Risk Management

## From NWRDC's Definitions

Risk refers to the potential for loss or damage resulting from inadequate or failed internal processes, people and systems, or from external events. Risk can have an adverse effect on the organization meeting its objectives. Risk is expressed in terms of probability and impact of the event (probability X impact = risk).

# NWRDC Risk Management

Some definitions of risk, such as the ISO 31000 standard, define risk as any uncertainty that can have an impact on objectives (positive or negative impact).

NWRDC currently use the term risk in the negative sense only, because it suits the nature of our organization (very low risk appetite and tolerance).

# NWRDC Risk Management

NWRDC's approach resembles the NIST "traditional" risk management approach described in NIST SP 800-30.

Our risk management program covers strategic and operational risk, including information/cyber security.

Since we are an IT service organization, the NIST approach is a comfortable fit for us because it focuses on threats, vulnerabilities, and controls.

# NWRDC Risk Management

Much of the information security and cybersecurity focus and control activities at NWRDC are operational; therefore, what many organizations would categorize as information security risks are our operational risks.

Don't underestimate the importance of choosing the best approach or framework, or custom designing a risk management program to fit your organization's needs.

# NWRDC Risk Management

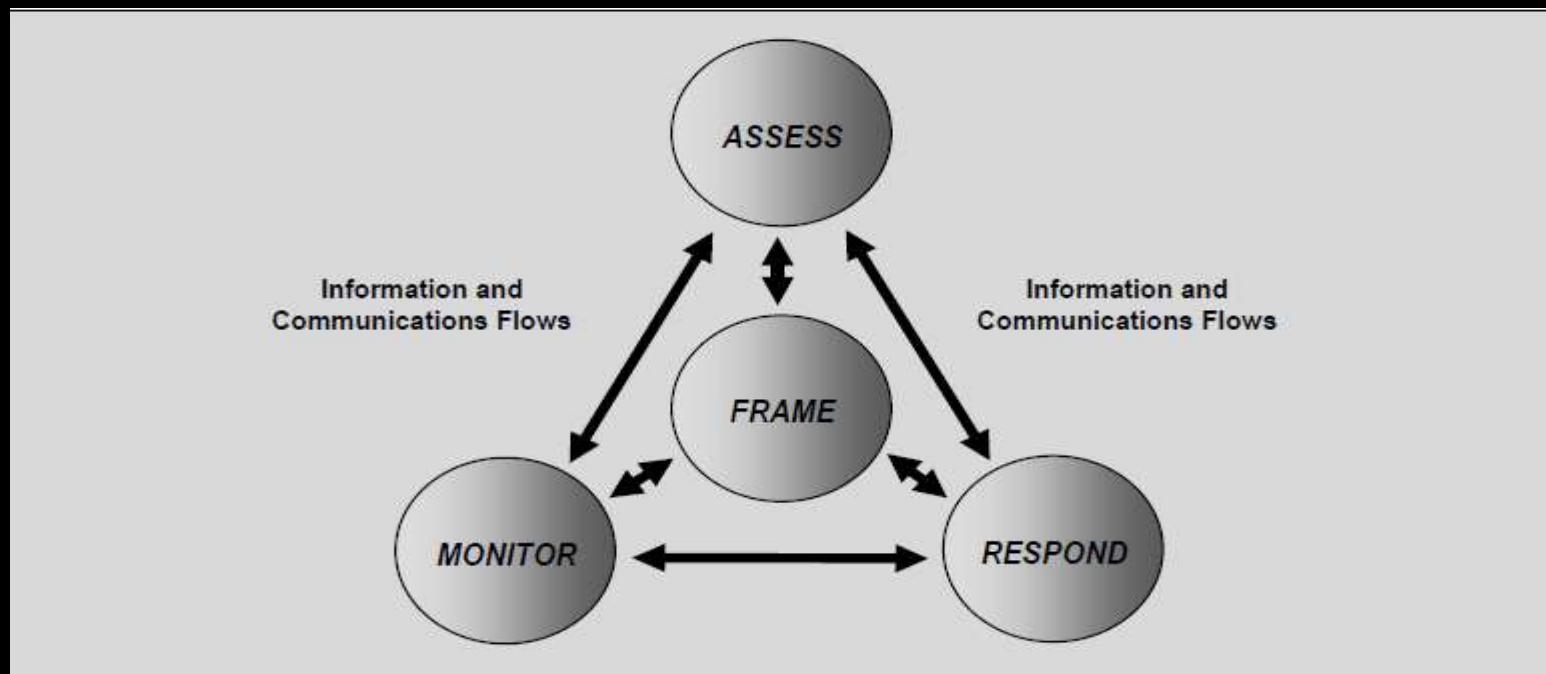
NWRDC's approach also resembles the ISO 31000 approach, with the exception of the basic risk definition. ISO 31000 says that risks are positive, negative, or both, but NWRDC risks are defined as negative, or adverse to objectives. The ISO 31000 framework emphasizes the importance of continual monitoring and improvement in the model of the Deming Cycle (Plan-Do-Check-Act) on which many management systems are based.

# NWRDC Risk Management

The following image is from NIST SP 800-30 - it depicts a very high-level model of risk management as a triangle of activities with “Risk Frame” in the middle. The Risk Frame is the risk management strategy or framework that will determine how you identify, assess, and respond to risk.

# NWRDC Risk Management

NIST Model from SP 800-30



# NWRDC Risk Management

The next image shows NWRDC's risk decision matrix, which indicates risk severity as a product of likelihood and impact. There are many different versions of this type matrix – they are all very similar.

We have quantitative definitions for the elements in the risk decision matrix; however, most of our risk analyses are more qualitative than quantitative.

# NWRDC Risk Management

## Risk Decision Matrix

		Likelihood of Risk Scenario				
		Rare	Unlikely	Possible	Probable	Almost Certain
Severity of Business Impact	Severe	Medium	Medium	High	Extreme	Extreme
	Large	Medium	Medium	Medium	High	Extreme
	Moderate	Low	Medium	Medium	Medium	High
	Small	Minute	Low	Medium	Medium	Medium
	Insignificant	Minute	Minute	Low	Medium	Medium

# NWRDC Risk Management

This is a simpler version – same idea

		Impact		
		Low	Medium	High
Probability	Low	Low Risk	Low Risk	Medium Risk
	Medium	Low Risk	Medium Risk	High Risk
	High	Medium Risk	High Risk	High Risk

# NWRDC Risk Management

Regardless which version of a risk decision matrix your organization chooses to use, it is a simple and effective tool for management staff to coalesce around when discussing, analyzing, and rating risk.

If you rely on a qualitative analysis, it's important that staff members are in agreement on what the levels of risk could mean to the organization if the risk is realized.

# NWRDC Risk Management

## Risk Identification

NWRDC uses inputs from all levels of management, Board members, subject matter experts on staff, prior incident reports, and control assessments as its primary sources for risk identification.

Tools used include written surveys, facilitated group meetings, individual interviews, reviews of prior reports.

# NWRDC Risk Management

## Writing Risk Statements

The inputs we receive from staff are usually not fully developed risk scenarios, but are concerns. We attempt to develop these concerns into a statement format that identifies the risk, plus the cause and the effect of the risk being realized. We are finding that most risk scenarios, high-level or specific, can fit in this format.

# NWRDC Risk Management

## Risk Statement Format

There is a risk of X,

Because Y,

Resulting in Z

# NWRDC Risk Management

## Sample Risk Statement

Short Statement - There remains a possibility that NWRDC and customer systems could become infected by malware or ransomware.

# NWRDC Risk Management

## Expanded Statement of Risk, Cause, and Effect

There is a risk that NWRDC will experience a successful malware or ransomware attack, because recent increases in defenses do not fully address this risk, resulting in adverse effects to NWRDC and customer systems.

# NWRDC Risk Management

## Treatment of Risk - Example

The identified solution was to expand licensing for our anti-malware tool to include all NWRDC desktops and servers. (in addition to other controls in place)

This solution protects us and protects our customers' systems from our environment as an attack vector. Management believes the risk is now reduced to low.

# NWRDC Risk Management

## Closing the Open Risk Item

For this example, the risk was closed when the solution, the desired level of protection, was reached.

Since risk assessment is an ongoing process, this risk will be revisited in the future and re-assessed.

# NWRDC Risk Management

## Types of Risk Treatment

After risks have been identified, analyzed, and rated, the next step is to determine the best risk treatments.

- Risk Avoidance – Avoid the risky activity
- Risk Reduction – Improve controls
- Risk Sharing or Transfer – Insurance or outsourcing
- Risk Acceptance – Face the risk

# NWRDC Risk Management

## Residual Risk

Most of our risks are treated with risk reduction; however improved controls don't usually reduce the risk to zero. Residual risk is what is left over. NWRDC's Risk Register includes a provision for assessing residual risk and management's acceptable risk level, to determine if a residual gap still exists.

# NWRDC Risk Management

Under our policy, if management believes that a risk can't be reduced to "Low" in a reasonable timeframe, the risk is presented to the governing Board and they are asked to approve management's risk acceptance.

This has only occurred once so far for NWRDC: The likelihood of the identified risk being realized was "Rare" but the impact would most certainly be "Severe."

# NWRDC Risk Management

In our Risk Decision Matrix, a combination of Rare likelihood and Severe impact yields a “Medium” risk.

Management determined that it would be cost prohibitive at this time to further mitigate the risk, and the risk was accepted as Medium. The risk scenario was presented to the Board and they agreed with the decision to accept the risk.

# NWRDC Risk Management

## Additional Sources of Risk Identification

External Audit Findings – We accept all external audit findings and develop a corrective action plan. We place the findings and recommendations on the Risk Register, along with the action plan, as de facto risks because they are audit findings. We do not always agree with the auditors on the actual level of risk, but we can always agree that improved controls are a good thing.

# NWRDC Risk Management

Control Assessments - We periodically compare our information security controls currently in place to accepted frameworks and standards such as NIST SP 800-53 and the CIS Top 20 Critical Security Controls. These comparisons can reveal gaps which present increased risk in certain areas.

# NWRDC Risk Management

Information security control assessments and gap analyses are performed by the Information Security Manager.

The identified gaps are assessed as risk items and entered in the NWRDC Risk Register with an identified solution if they are significant. This provides for tracking and follow-up on the risk items.

# NWRDC Risk Management

Incident Reports – We create after action reports for significant incidents and outages that we and our customers experience. These reports include inputs from incident participants at all staff levels. Over time these reports show patterns of things that can go wrong which can be inputs to the risk management process.

# NWRDC Risk Management

## Challenges

- Obtaining open and honest cooperation at all levels of management is not easy.
- Convincing managers to place their risk concerns on the radar – the Risk Register.
- Obtaining inputs that are true strategic or operational risks that can be controlled.

# NWRDC Risk Management

## Challenges (cont.)

Periodic follow-up on the status of risk items can be challenging with a small staff – if members are busy with operational duties, then working on risk mitigation and control enhancements is not always a high priority. We assign a Risk Custodian to each risk – this person needs to be in a good position to be accountable for implementing the identified solution.

# NWRDC Risk Management

## Challenges (cont.)

- Performing follow-up risk status inquiries using only a spreadsheet can be difficult, even for a small organization.
- There are software tools to help with these activities, but they can be expensive. We are beginning to use our SharePoint intranet for risk tracking.

# NWRDC Risk Management

Questions?