


**MINUTES
WELD COUNTY COUNCIL
October 17, 2022**

The Weld County Council met in regular session in full conformity with the Weld County Home Rule Charter at 6:30 p.m., Monday, October 17, 2022, at the Weld County Administration Building, 1150 O Street, Greeley, CO.

ROLL CALL:

 The meeting was called to order by President Nancy Teksten. Councilmembers Tonya L. Van Beber, Cindy Beemer, James Welch and Rupert Parchment were present, constituting a quorum of members. Also present was County Attorney Bruce Barker and Council Secretary Linda Kane.

APPROVAL OF AGENDA :

Councilmember Beemer made a motion to approve the agenda, seconded by Councilmember Parchment and carried.

APPROVAL OF DOCUMENTATION:

Approval of September 19, 2022, Minutes

Councilmember Welch made a motion to approve the May minutes, seconded by Councilmember Parchment, and the motion carried.

REVIEW PROGRAM:

Ryan Rose, Chief Information Officer/Director of Administrative Services

Mr. Rose gave an overview of his role as director of administrative services.

He said the average turnover rate in the information technology department is 3.2% compared to the national average of 22%.

His annual budget is just over \$10 million. The county has 1,900 employees and they are required to perform monthly security online training courses. Mr. Rose said most cyber attacks come via email. The county has a two-factor identification system.

See addendum 1.

PUBLIC COMMENT:

Sheriff Steve Reams said Mr. Rose is one of the best hires the county has made. He also stated that he did not mean to offend anyone in an email he sent to Council.

Sherrie Peif, of Evans, filed a CORA request per the recent salary negotiations. She encouraged Council to take another look at salaries before signing Resolutions. She said the last Council meeting was disorganized.

Rob Peacock, of Firestone, said he changed his mind on salary increases, citing he was at first against them. He said the sheriff really needed a pay increase.

Dave Kisker, of Greeley, said that based on other counties with comparable populations, the sheriff did not need a significant pay increase.

OLD BUSINESS:

Resolution 223, Salary for Commissioners

Councilmember Welch made a motion to approve Resolution 223, seconded by Councilmember Van Beber, it was opposed by Councilmembers Parchment and Beemer, President Teksten voted aye, and the motion carried.

Resolution 224, Salary for Clerk and Recorder

Councilmember Welch made a motion to approve Resolution 224, seconded by Councilmember Parchment, it received all ayes and the motion carried.

Resolution 225, Salary for Sheriff

Discussion prior to the vote included Councilmember Beemer who said it doesn't make sense that a subordinate make more than the Sheriff. She said she had a strong problem with setting the sheriff's salary at \$208k, as it was too low.

Councilmember Parchment said it wouldn't be a surprise if the sheriff became disgruntled when employees below him were making more money.

Councilmember Welch said it's not uncommon that a boss sometimes get paid less than subordinates. He said by setting the sheriff's salary at \$208k, he will be the highest paid sheriff in the state.

Councilmember Welch made a motion to approve Resolution 225, it was seconded by Councilmember Van Beber, received nays from Councilmembers Beemer and Parchment, with President Teksten casting the tie-breaking vote of aye, and the motion carried.

Resolution 226, Salary for Assessor

Councilmember Welch made a motion to approve Resolution 226, it was seconded by Councilmember Van Beber, received all ayes, and the motion carried.

NEW BUSINESS:

Coordinator Reports/Councilman Reports

There were none.

Bills

Councilmember Welch made a motion to approve bills, it was seconded by Councilmember Beemer and carried. The bills were paid as follows:

- Weld County Phone Bill for September \$25.00

Councilmember Beemer made a motion to approve bills, it was seconded by Councilmember Parchment and carried. The bills were paid as follows:

- Greeley Tribune Publication of 2nd quarter RTTP \$57.30

ADJOURNMENT:

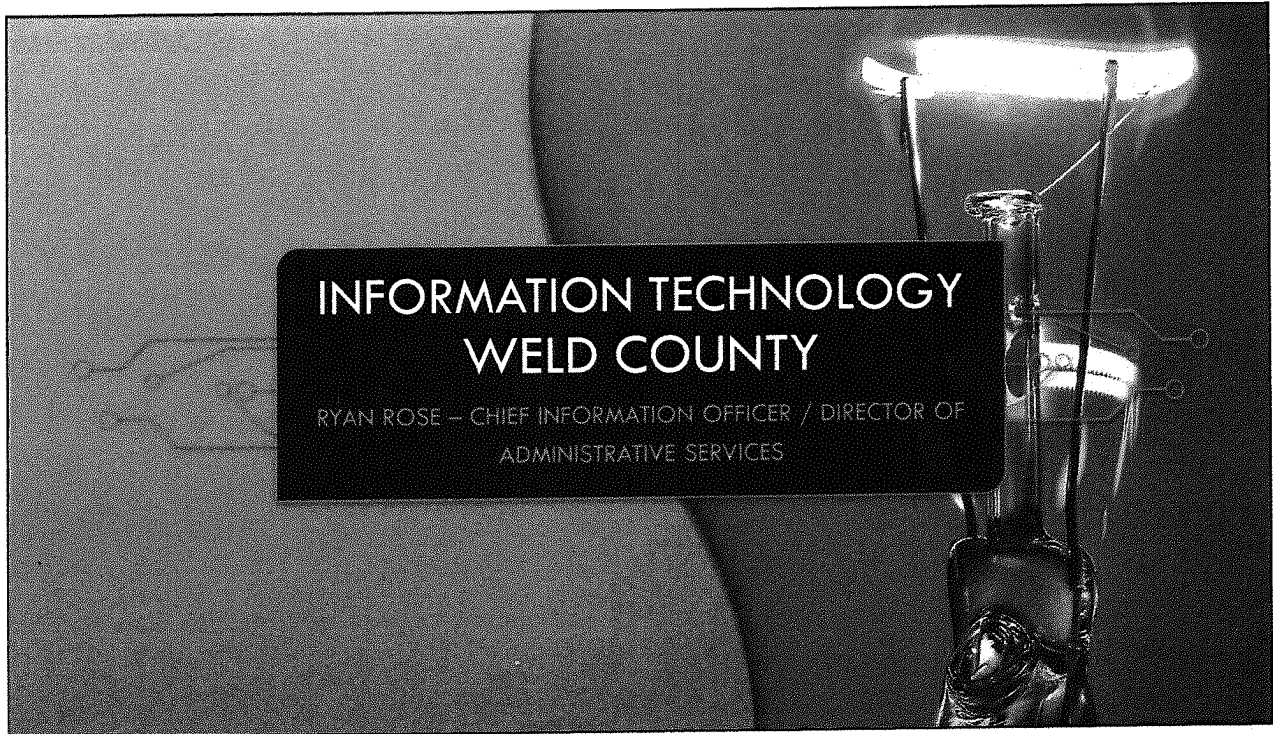
By acclamation, the meeting was adjourned at 7:35 p.m.

November 21, 2022
November 21, 2022

Nancy Teksten
Council President, Nancy Teksten

11-21-22

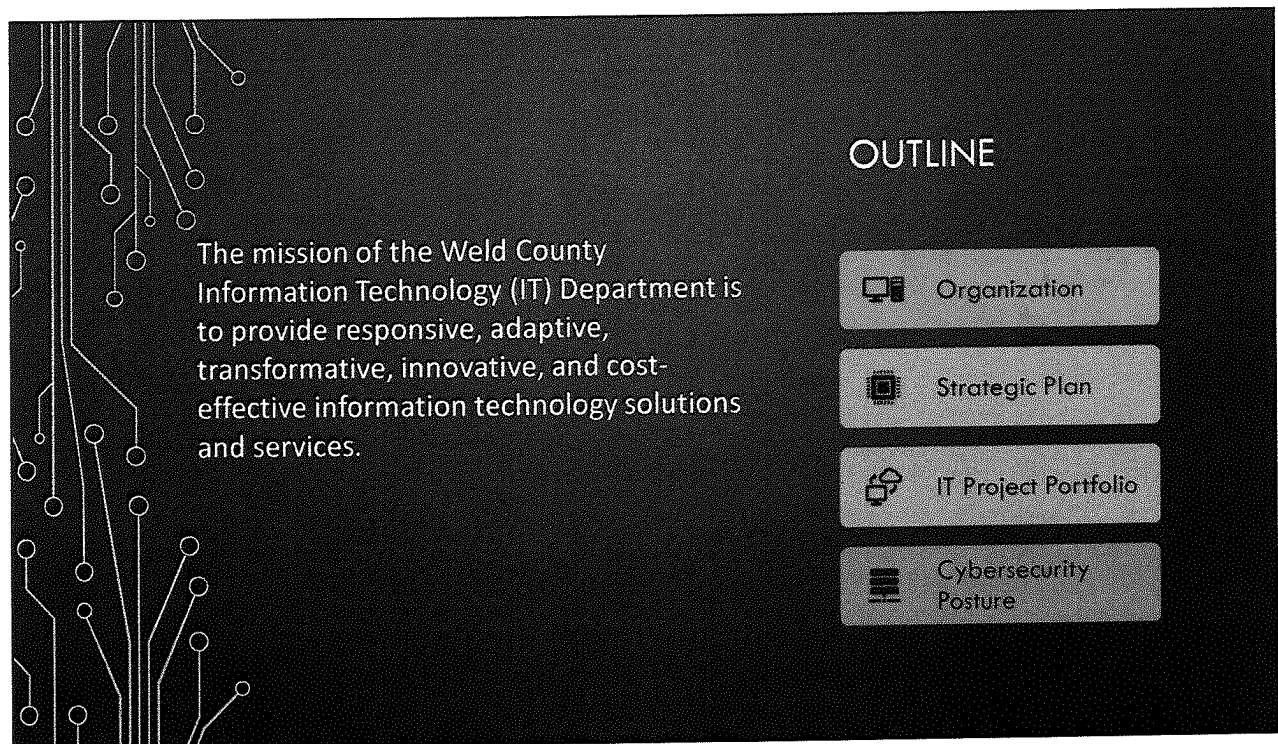
Linda Kane
Council Secretary, Linda Kane



INFORMATION TECHNOLOGY WELD COUNTY

RYAN ROSE – CHIEF INFORMATION OFFICER / DIRECTOR OF
ADMINISTRATIVE SERVICES

1



OUTLINE

The mission of the Weld County Information Technology (IT) Department is to provide responsive, adaptive, transformative, innovative, and cost-effective information technology solutions and services.



Organization



Strategic Plan



IT Project Portfolio



Cybersecurity
Posture

2

STRATEGIC PLAN

- Information Technology Plan
 - Ten Strategic Domains
 - Information Technology Security
 - Cloud Services
 - Consolidation and Optimization
 - Budget and Cost Control
 - Human Resource / Talent Management
 - Citizen and Departmental Enablement
 - Mobility
 - Disaster Recovery and Business Continuity
 - Geographic Information Systems
 - Public Safety Information Technology PSIT
- Weld County Strategic Priorities
 - 6 Priorities
 - Ensure Healthy, Safe, and Livable Communities
 - Balance Growth and Development
 - Plan for Resilient Infrastructure, Facilities, and Resources
 - Be an Employer of Choice
 - Provide excellent, Cost-Effective Service Delivery.
 - Enhance Accessible Communication, Outreach, and Awareness

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PROJECT PORTFOLIO

- Project Management Office (PMO) provides transparency, cost control, and accountability
- Recurring meetings with all county departments and offices throughout the year
- Information Technology Annual Project Submittal Process
- For the past nine years, an average of 75 – 100 IT projects annually
 - Some transcend fiscal year, multi-year projects i.e., digitization of physical media, public safety project, fiber optic cabling, ERP, etc.
- Board of County Commissioner quarterly reports and annual summary

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CYBERSECURITY POSTURE CONT.

- Physical
 - Data Center Controls – ID Card Access, Video Surveillance, Environmental Monitoring
- Host
 - Cloud-based secure DNS, Data Loss Prevention, Endpoint Detection, and Response
- Network and Data Center
 - Application layer firewalls, Diverse connectivity, Disaster Recovery Facility, AirGap Technology, off-site backups, backups nightly, weekly, monthly, and annually.

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CYBERSECURITY POSTURE CONT.

- Application
 - Strict change management policy (1000 documented changes in 2021, 675 2022), security vulnerability scans (internal and external), monthly patch management strategy (including zero-day), vendor management
- People
 - Monthly mandatory security training, coordinated phishing campaigns, centralized IT security training on enterprise applications, cybersecurity insurance, multi-factor authentication

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Weld County
Information Technology
Strategic
Plan
2021-2022

Tactical Goal 1.2

Provide end-user awareness and education – of the importance of protecting the information of the Weld County citizens, employees and the systems we support. Develop security onboarding processes that assist employees with best-practices on how to handle sensitive data. Work with Human Resources to develop IT Security training classes for all County team members during the County onboarding process, as well as provide subsequent follow-up and refresher training throughout the tenure of county employees. Provide monthly IT security updates that include information on how to continue to protect County digital assets.

Domain 2 – Cloud Services

Weld County embraces the spirit and the potential value-add of Cloud Computing. Weld County IT will use a thoughtful, blended and transparent approach when implementing these technologies and services and will guide the County on the uses and benefits of Cloud Computing. This will allow us to leverage the potential increases in system availability, application stability, security and functionality of services associated to Cloud Computing. ***County Strategic Area of alignment – Enabling Strategies***

Tactical Goal 2.1

County Business Intelligence Dashboard – Leverage the Microsoft Power Business Intelligence cloud-based business intelligence dashboard to continue to develop an environment that can be used by departments and offices to better manage and review data sets. Develop an interface into the County Intranet for dashboard access and customization.

Tactical Goal 2.2

Incorporate Cloud Services review into all IT procurement procedures – to ensure that the cost-benefit of hosted services vs. on premises services is being evaluated. Incorporate a formal scoring and evaluation process into the application portfolio. Evaluation criteria will include; if the vendor offers a hosted solution, is there sensitive data involved, overall complexity of leveraging the solution, the cost benefit to the County, and end-user impact.

Domain 3 – Consolidation and Optimization

Network, Voice, Data Center, Enterprise Applications and Storage environments are all critical components of the Weld County IT infrastructure. Traditional data centers have substantial electrical, cooling and cabling requirements. Hardware and software virtualization technologies provide the ability to consolidate these environments. This consolidation assists Weld County IT with keeping capital and operational expenses lower, while still providing a highly available and robust network and server environment. Consolidating network and voice services allows the County to leverage investments into core network technologies and provides a more robust and functional County phone system. Implement advanced features that will optimize call centers for Human Services, Information Technology and other County offices and departments. Providing a comprehensive application portfolio

Domain 4 – Budget and Cost Control

Leading with responsive, innovative and cost-effective services is a core value of the County. IT is an important part of this value and focusing on cost control, cost reduction and budget transparency is an important part of our mission. This should be done internal to IT, but also focusing on other departments and offices technology to ensure we are investing in proven applications and hardware that integrate into the existing environment as well as achieving the business need. **County Strategic Area of alignment – Public Safety, Health Service, Human Services, Transportation, Community and Economic Development, Enabling Strategies.**

Tactical Goal 4.1

Contract review associated to hardware, software and professional services is an iterative process within IT – reviewing agreements for potential issues and for ways to lower cost ensures accuracy of the services provided, but also allows a comprehensive review of the associated services to ensure they are still relevant for the business. Researching alternatives to typical maintenance models have the potential of lowering cost and simplifying the overall contract renewal process.

Tactical Goal 4.2

Review the IT annual budget and the five-year IT Capital Improvement Plan – Develop a line-item annual budget for IT that provides transparency into the IT services provided to the County. Incorporate an annual review of the IT CIP to validate accuracy, cost and that the technologies referenced are still relevant to the County's business.

Domain 5 – Human Resource / Talent Management

Hiring and retaining quality IT team members enables higher levels of service and professionalism to County offices and departments. Creating a work environment that is open and communicative assists with the recruiting of qualified IT professionals. Implementing a flexible schedule allows for team members to achieve a work/life balance and ultimately expands the hours of support provided by IT to the County. Working within the County framework, develop a compensation plan for the IT department. Having a compensation plan provides team members the ability to plan and forecast their career path. This plan, along with investing in team member's professional development builds continuity and a consistent team knowledge base. **County Strategic Area of alignment – Enabling Strategies**

Tactical Goal 5.1

Align technology, IT security awareness and services with professional development opportunities – to better support the needs of the County we must have a highly skilled and trained workforce. As technology advances, we must stay current with our skills and expertise.

online submission form that will assist the County with the specific information and criteria that is needed to assess the overall project and value to the County and/or respective area. The process needs to align with the County's annual budget cycle, but also allow for the flexibility that technology projects must have. Detailed documentation and evaluation criteria will be provided to the County to ensure transparency with the process. Criteria will be weighted accordingly and provided to the County for review.

Domain 7 – Mobility

Anytime / anywhere computing is a requirement for all technology enabled organizations. The ability to have a mobile workforce is critical in today's world along with providing a mobile friendly technology environment that is functional across all types of mobile devices and operating systems. County department and offices have the need to move seamlessly from office, to the field, to home and beyond. This mobility needs to be done in a secure and functional way that is fully supported by the IT department and the associated application vendors the County uses to perform its specific functions.

County Strategic Area of alignment – Enabling Strategies

Tactical Goal 7.1

Create an IT mobility roadmap - that includes an application alignment matrix so that the preferred device is deployed for the appropriate job function. Update IT inventory and identify device refresh for mobile phones and tablet devices. Continue to research the potential benefits of a County BYOD model. Review security of the mobile environment to ensure compliance with County code and acceptable use.

Tactical Goal 7.2

Implement a remote access portal that will allow for connectivity from County owned and non-County owned devices – configure a remote access portal that will allow County employees to work from anywhere they have internet connectivity. Enterprise applications will be made accessible if the connected device has the appropriate security patches and anti-virus updates. The ability to perform a "host" check prior to authenticating is critical to the security of the County network and enterprise applications.

Domain 8 – Disaster Recovery and Business Continuity

Information Technology provides the foundation for many of the County's critical services. Disaster recovery and business continuity planning are a part of every successful organization. Determining mission critical IT services is a collaborative process and involves all departments and offices within the County. We must be able to communicate, process critical County functions such as payroll, and deliver services to the citizens of Weld County during disasters. The ability to recover critical services is dependent upon hardware, software and key personnel. An environment that is geographically located far enough from the County is ideal,

Tactical Goal 9.3

Support emergency planning, response, and recovery –The County will continue to improve GIS data and services to support disaster response and recovery through the implementation of resources that facilitate the rapid production and operational use of Geographic Data. These resources will leverage a balance of technologies to maximize operational availability regardless of the type of event that may occur.

Domain 10 – Public Safety Information Technology (PSIT)

Public Safety Information Technology focuses on providing a robust, stable, and secure computing environment for all the county agencies that utilize the enterprise applications, systems and networks provided for supporting the public safety agencies within Weld County. ***County Strategic Area of alignment – Public Safety, Health Service, Human Services, Transportation, Community and Economic Development, Enabling Strategies.***

Tactical Goal 10.1

Develop a consolidated reporting and business intelligence model – Historical data sources need to be reviewed, inventoried and consolidated for access. The repository should be secure, follow all data custody rules and regulations and be accessible to the appropriate data stewards.

Tactical Goal 10.2

Develop a 5-year public safety IT capital improvement plan – Identify key network and system components that will be refreshed and/or replaced within the next 5 years. Public safety infrastructure is critical to the safety of the citizens of Weld County and the foundational elements of the applications must be reliable, redundant, and secure.

Tactical Goal 10.3

Focus on business process improvement with the enterprise public safety system – Work with key stakeholders to continue to leverage the investment in the public safety system so that the system meets current and future expectations. Continue to leverage the business process analysis model for constant review and improvements.

Complete Portfolio - Project Status as of September 30, 2022

Current Projects	Completed Projects	Budget Spent	Budget Remaining	Actual Hours
81	41	\$5,844,493	\$4,502,359	40,124
Approved Budget				
\$10,346,852				

Effort & Budget by Department					Project Status		Project Health	
Department	Project Count	Actual Hours	Approved Budget	Budget Remaining				
Clerk to the Board	1	0	\$0.00	\$0.00				
Communications/Dispatch	1	11	\$680,000.00	\$463,661.61				
Facilities	4	19	\$12,000.00	\$12,000.00				
Fleet Services	1	4	\$0.00	\$0.00				
Human Resources	3	313	\$0.00	\$0.00				
IT	28	3490	\$2,077,498.65	\$1,143,293.40				
IT - GIS	1	88	\$0.00	\$0.00				
Office of Emergency Management	1	7	\$0.00	\$0.00				
Oil & Gas	1	3	\$0.00	\$0.00				
Planning - Planning & Zoning	1	0	\$0.00	\$0.00				
Planning Department	1	60	\$0.00	\$0.00				
Public Safety	8	703	\$477,800.00	\$189,215.09				
Public Works	4	716	\$43,800.00	\$29,167.47				
Social Services	10	1908	\$75,000.00	\$36,712.50				
Treasurer	2	7	\$12,000.00	\$12,000.00				
Weld	14	18058	\$5,082,472.59	\$2,441,958.75				

Completed: 10
In Progress: 19
Not Started: 41
On Hold: 52

On Plan: 15
Needs Attention: 2
Off Plan: 64

On Plan
Needs Attention
Off Plan

Completed
In Progress
Not Started
On Hold

On Plan
Needs Attention
Off Plan

Top Issue Count
Budget: 1
Resource: 3
Schedule: 11

Commissioner Mike Freeman - Project Status as of September 30, 2022
(for the Departments that you coordinate)

Legend - Health

Green (On Plan)...if within budget, within one week of schedule, resources available to complete project, scope as planned
 Yellow (Needs Attention)...if within 10% of budget OR between 1-4 weeks behind schedule OR minor resource issues OR minor scope changes
 Red (Off Plan)... if greater than 10% of budget OR greater than 4 weeks behind schedule OR resources not available OR major scope changes

Current Projects

	Project Name	% Complete	Planned Finish	Weld Revised Finish	Project Health	Top Issue	Approved Budget	Budget Remaining	Budget Year	Budget Cycle	Actual Hours
Not Started	PS-1375 2022 Procure NetMotion Licenses	0%	12/31/22		On Plan		\$17,000	\$17,000	2022	On Cycle	0
	WELD-1288 BPA - County Contract Approval/Management Business	0%	12/31/22		On Plan		0	0	2022	On Cycle	0
On Hold	IT-1355 2022 Data Domain - DR SITE	90%	9/1/22	11/15/22	On Plan		\$250,515	0	2022	On Cycle	54
	IT-1358 2022 Compute	5%	9/30/22		On Plan		\$230,000	\$230,000	2022	On Cycle	24
	IT-1361 2022 NCRFL Network	25%	8/30/23		On Plan		\$20,000	\$13,655	2022	On Cycle	6
	IT-1366 2022 Isilon NAS Storage	25%	8/31/22	11/15/22	Off Plan	Schedule	\$110,000	\$19,179	2022	On Cycle	6
	IT-1447 2023 Network Communications - Building Network Switches	5%	9/29/23		On Plan		\$262,361	\$262,361	2023	Off Cycle	4
	IT-560 Disaster Recovery Business Continuity Planning Phase II	25%	12/31/23		On Plan		0	0	2017	On Cycle	680
	WELD-1383 2022 Microsoft Annual Agreement	1%	12/31/22		On Plan		\$967,671	\$20,418	2022	On Cycle	2

Completed Projects

Project Name	Approved Budget	Budget Spent	Budget Remaining	Budget Year	Budget Cycle	Completion Date	Actual Hours
HEA-1253 Death Certificate Scanning Project	\$25,000	\$4,860	\$20,140	2022	On Cycle	9/7/22	34
HEP-1337 2022 Community Health Survey	0	0	0	2022	On Cycle	5/10/22	76
IT-1216 Data Center - Compute	\$409,076	\$406,637	\$2,439	2021	On Cycle	8/23/22	324
IT-1248 Managed File Transfer (MFT) Conversion	0	0	0	2021	Off Cycle	7/29/22	1,281
IT-1250 ProtegeGX Upgrade	0	0	0	2021	Off Cycle	9/27/22	189
IT-1287 35th Ave Widening	\$94,210	\$94,210	0	2021	Off Cycle	1/21/22	86
IT-1290 Cyber Recovery for Ransomware (Air Gap)	\$670,000	\$606,312	\$63,688	2021	Off Cycle	6/29/22	1,232
IT-1295 IT Migrate RSA to Cloud MFA	\$3,000	\$3,600	(\$600)	2021	Off Cycle	8/31/22	142
IT-1299 iPayment Migration to Cloud	\$38,800	\$33,248	\$5,552	2021	Off Cycle	5/31/22	303
IT-1305 Upgrade TMA	0	0	0	2022	On Cycle	6/29/22	170
IT-1311 Streamline Assessor Datamart and Portal Data Process	0	0	0	2021	Off Cycle	4/26/22	208
IT-1312 RTA System Upgrade	0	0	0	2022	On Cycle	3/29/22	86
IT-1322 Upgrade and Migration of Tyler C&R database	\$10,000	0	\$10,000	2022	On Cycle	8/9/22	51
IT-1323 Upgrade and Migration of Tyler Treasurer database	\$10,000	0	\$10,000	2022	On Cycle	7/19/22	26
IT-1362 2022 UPS	\$15,000	\$8,625	\$6,375	2022	On Cycle	9/21/22	71
IT-1365 2022 Certificates	\$2,000	0	\$2,000	2022	On Cycle	4/26/22	4
IT-1381 Judicial Carpeting & Cabling	0	0	0	2022	Off Cycle	6/28/22	65
IT-1440 CrowdStrike Antivirus Trial	0	0	0	2022	Off Cycle	9/2/22	35
IT-794 TrackIt Replacement / Change Management Solutions	\$50,000	\$43,500	\$6,500	2019	On Cycle	2/11/22	1,282
IT-887 Decommission of 2008 OS R2	0	0	0	2018	Off Cycle	6/2/22	1,479
PS-1095 2020 Data Center - Server NSX Firewall and IPS	\$10,000	\$10,000	0	2020	On Cycle	5/12/22	180
PS-1231 Data Center - System Log	\$15,000	0	\$15,000	2021	On Cycle	1/14/22	81
PS-1233 Network Communications - Public Safety Network Switches	\$80,000	\$80,495	(\$495)	2021	On Cycle	6/29/22	38
PS-1376 2022 Procure RSA Tokens and Licenses	\$11,000	0	\$11,000	2022	On Cycle	6/29/22	0
PS-713 Alchemy Data Migration	0	0	0	2017	Off Cycle	7/29/22	11
WELD-1125 Improve Accela Citizen Access (ACA) Usability and Functionality	\$141,481	\$141,369	\$112	2020	Off Cycle	8/9/22	3,482
WELD-1134 Tracking Red Lining process work in Accela	\$96,405	\$96,405	0	2020	Off Cycle	4/8/22	1,549
WELD-1292 IE 11 to Microsoft Edge Upgrade	0	0	0	2021	Off Cycle	6/28/22	23
WELD-1387 2022 Adobe Creative Cloud	\$112,000	\$111,368	\$632	2022	On Cycle	2/10/22	0
WELD-1395 2022 Employee Resident Report Processing	0	0	0	2022	Off Cycle	7/26/22	88

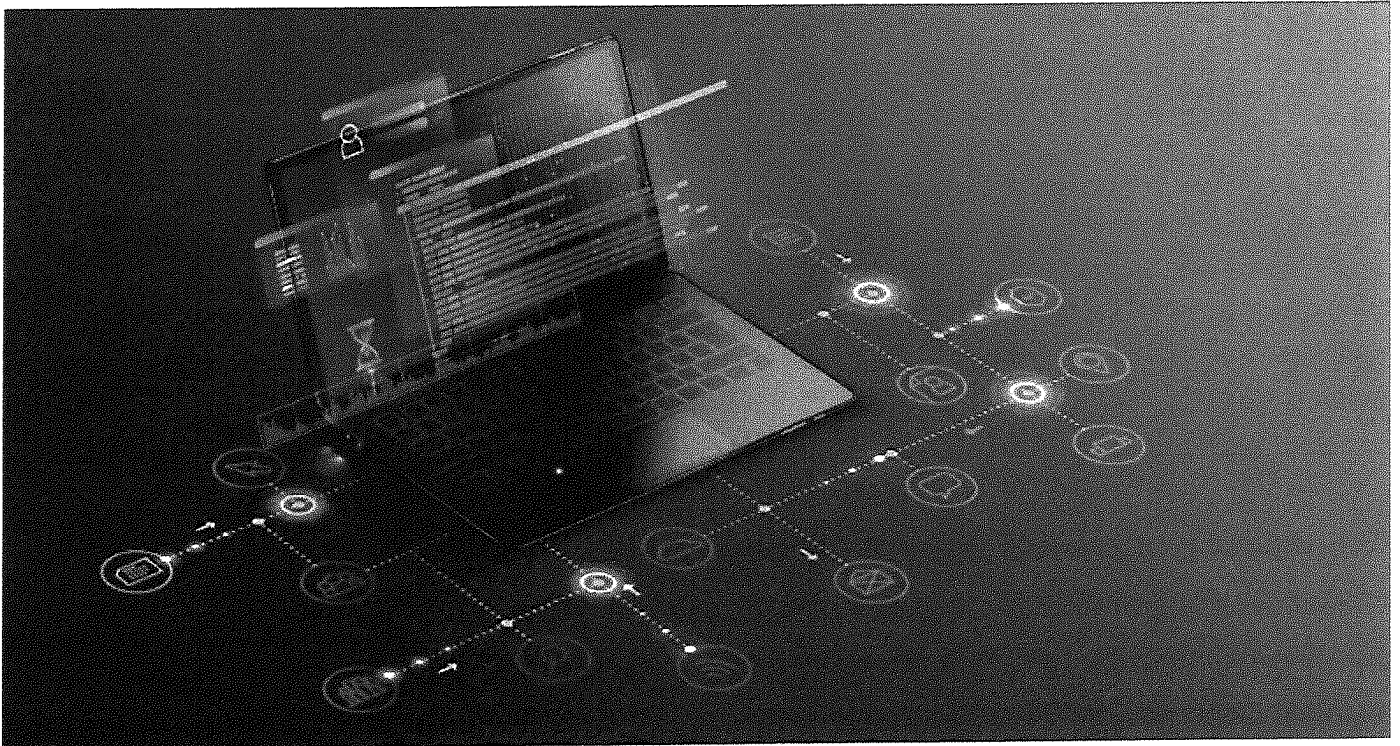


CIVIC INNOVATION

Why a Colorado Government Shifted Its Website to .Gov Domain

Weld County, Colo., officials this month took a new action to improve the county's cybersecurity as it shifted to a .gov domain name, according to a news release from county leadership.

October 13, 2022 • Trevor Reid, Greeley Tribune



(TNS) — Weld County officials this month took action to improve the county's cybersecurity as it shifted to a .gov domain name.

The county's website is now hosted at weld.gov, as of Oct. 5, though the public can still
<https://www.govtech.com/civic/why-a-colorado-government-shifted-its-website-to-gov-domain>

used a .com domain because the .gov domain was expensive to purchase and somewhat complicated to obtain. In 2021, the domains were made available at no cost to qualifying organizations, following the .gov domain's shift from the U.S. General Services Administration to the Cybersecurity and Infrastructure Security Agency.

"Over the years, as technology has improved and increased in our daily use, people looking to commit online fraud have become more sophisticated," Rose said in the release. "Government at all levels understand the importance of keeping their systems and information safe, and this is just one more way Weld County is doing just that."

ADVERTISEMENT

The move to weld.gov comes during Cybersecurity Awareness Month and follows a number of cyberattacks on government websites. The day of the move, the Colorado state government's homepage, colorado.gov, was taken down due to a cyberattack. In Frederick officials announced they were investigating allegations that hackers

NACo CYBER SECURITY PRIORITIES AND BEST PRACTICES

Fighting cyberattacks in local government has become even more difficult in recent months due to attacks such as the SolarWinds breach and Microsoft Exchange (email) exploit, as well as the current pandemic environment and resulting increases in cloud adoption and remote work. These recent events coupled with the rise in ransomware, IoT devices and user credential harvesting, are raising the security bar for what counties need to implement and what they should be doing with end users as it pertains to cyber security. The National Association of Counties through the NACo Telecommunications and Technology Policy Steering Committee established the following priorities:

- Funding assistance in any form deemed necessary to provide for the information technology resources required to adequately provide security at all levels;
- Funding assistance for basic security awareness training of employees and advanced security training for information technology professionals within local government including assistance in the completion of advance certification and degree programs;
- Cooperative efforts in information sharing among all federal, state, and local governments in addition to private sector organizations regarding breaches, potential threats, threat levels, and any techniques that would assist in the prevention or mitigation of cyber related threats;
- Collaborative efforts in the form of committees or task forces that are inclusive of local government membership with federal agencies such as the Department of Homeland Security and subprograms such as NCC, US-CERT, and ICS-CERT;
- Creation of programs and initiatives that designate local government Cybersecurity liaisons and/or representatives that serve in conjunction with federal agencies such as the Department of Homeland Security

Further, in working with the NACo Tech Xchange, as well as national resources and other county IT leadership, it has become apparent how important funding and related resources are needed by counties. This is especially evident in the small to mid-size counties, who face the greatest challenges with implementing and maintaining cyber best practices. Specifically, the following are best practices that are the most important for county cyber needs that exist today to address the increasing onslaught of Cyber Attacks.



Cost



Cyber Defense Impact



Workload Effort

The icons represent the percentage of cost, impact on cyber defenses and workload effort needed to implement the priority. The more complete the outer circle of the icon is, the higher the percentage of cost, impact or workload, but also is dependent on current county circumstances.

MFA (Multi-Factor Authentication)



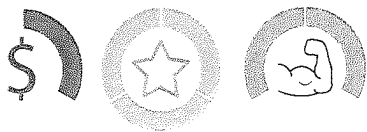
It is a proven fact that multi-factor authentication significantly decreases the amount of successful cyber-attacks on a county. Depending on the main technology platform that a county has implemented for end user authentication, will determine the cost, as well as time and resources needed. And let us not forget the education with end users. MFA solutions alone can run into hundreds of thousands of dollars, depending on the size of the county.

DMARC (Domain-based Message Authentication, Reporting and Conformance)



DMARC is an email authentication protocol. The percentage of local government implementing this security feature is on the low side. The main cost associated with DMARC is hiring the resource to handle implementation of the feature on a county's existing infrastructure or training current IT staff to do so.

End User Education



More counties are seeing the benefits in implementing a COTS solution for phishing tests and then follow-up end user education. Both of those efforts involve time, but more importantly funding to address. An average size county of 200 employees would cost \$5,000 or more depending on the modules included. Further, counties should be participating in cyber simulations and tabletops on a regular basis. Depending on the provider, this cost can range from \$900 per person or \$5000 per event, neither of which is affordable even for mid-size counties.

End User Protection



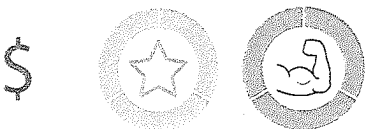
With the prospect of many county employees continuing to work remotely in some fashion, there is the need for increased end user device and access protection. This includes implementing the next generation of anti-virus, implementing automatic remote patching and other tools and software that will secure these endpoints devices. All of which involve increased expenses, both initial and on-going.

MS-ISAC membership



The Multi-State Information Sharing and Analysis Center provides valuable security resources for counties. Initial membership is no-cost, with additional services available for cost. Given the significant no-cost benefits, every county should be a member. To date, less than one third of counties are members. This means that counties are missing out on security benefits such as vital alerts and notifications of exploits, patches and breaches. The challenge is that it takes time and resources to create marketing campaigns that will reach all counties. Conversations with a county explaining the benefits and getting a county signed up takes resources as well.

Policies



It is imperative to have a stand-alone cybersecurity policy that at a minimum covers roles and responsibilities. Security incident policy, forms and procedures can also fall under this stand-alone policy. While many counties have the resources to create such a policy, smaller counties may need paid outside assistance to create.