• Welcome and introductions
• Strategic and Tactical Plan
• Mission Level Metrics
• Applications
• Security & Compliance
• Operations
• 311 Contact Center
• Denver Media Services
Mayor’s Vision

We will create a world-class city where everyone matters

Mayor’s Priorities

Kids, Jobs and Safety Net
Our Vision

*We will become the nation’s model for delivery of technology, media and contact center services for local government*
No one of these core values is more important than another; they are all equal. Failing to value any one of these will be to the detriment of the other two.
# Strategic Plan Goals

**Employee Engagement**

<table>
<thead>
<tr>
<th>Operational Efficiency</th>
<th>Agency Satisfaction</th>
<th>Citizen Satisfaction</th>
</tr>
</thead>
</table>

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- **Operational Efficiency**
- **Agency Satisfaction**
- **Citizen Satisfaction**
Employee Engagement

Strategy 1
- Attract and retain a skilled and motivated IT workforce

Strategy 2
- Through Peak Performance, develop a plan to staff Technology Services in a sustainable manner

Strategy 3
- Execute a plan to address deficiencies and opportunities as they are identified

Strategy 4
- Invest in Lean Six Sigma to equip all levels of Technology Services with the process tools needed to improve our business

Strategy 5
- Invest in employee technical training in support of our strategy, and consistent with industry best practices
Operational Efficiency

Strategy 1
• Document and execute repeatable operational processes, consistent with industry best practices

Strategy 2
• Develop or procure tools to effectively manage operational systems and processes

Strategy 3
• Adopt a "cloud-first" strategy for services or infrastructure where hosted services are a higher value

Strategy 4
• Modernize datacenters and infrastructure, where doing so improves service or reduces risk

Strategy 5
• Realize the full value of our enterprise architecture and enterprise applications

Strategy 6
• Develop a sustainable funding model for Technology Services, consistent with our goals and strategy
Agency Satisfaction

Strategy 1
- Develop an effective system to understand agency business and business needs

Strategy 2
- Develop portfolio and project management processes consistent with industry standards

Strategy 3
- Develop a plan for "light" technologies and policies for agency-empowered solutions

Strategy 4
- Facilitate work anytime, anywhere by integrating mobility and collaboration technologies

Strategy 5
- Improve access, usability and visibility of City information
Citizen Satisfaction

**Strategy 1**
- Transform Denver 8 to a "media services" model

**Strategy 2**
- Prepare and equip 311 to engage citizens proactively and through multiple online channels

**Strategy 3**
- Improve access to government information

**Strategy 4**
- Improve citizen outreach capabilities

**Strategy 5**
- Create a comprehensive strategy and further leverage social media

**Strategy 6**
- Invest in delivery of information and services to mobile devices
## 2014 Initiatives

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## Initiatives – Goals Maps

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Employee Engagement</th>
<th>Operational Efficiency</th>
<th>Agency Satisfaction</th>
<th>Citizen Satisfaction</th>
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<td>Customer Service Improvements</td>
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Note: N/A = Not Applicable, TBD = To Be Determined.
Improving and maintaining employee engagement is the key to our success. Without employee engagement few, if any of our remaining goals can be achieved.

**Areas to Improve**

- Senior Leadership
- Strategic direction and expectations
- Communication
- Training

**Target for 2014**

- **Employee Engagement**
  - 8.5

**Comparison**

- **TS**
  - 2011: 5.7
  - 2013: 7.2

- **Citywide**
  - 2011: 13.1
  - 2013: 15.1
Employee Engagement

2014 Index Score
27.05

- 2 major reorganizations
  - Resource realignment - management and staff

- New quarterly recognition program

- Increased investment in training dollars for staff

- Cultural changes
  - Increased communication – staff meetings
  - Leadership “Open Door” policy
  - Wellness Committee & Initiatives
  - Fostering a culture of teamwork and innovation
Succession Planning

65 FTE Retirement Eligible* by Division (12/31/2015)

- Operations: 17%
- Applications: 14%
- Media Services: 18%
- Finance: 22%
- CIO/Admin: 11%
- PMO: 6%
- 0% 0%

Tactics for Succession Planning

Training
- Knowledge transfer - playbooks to document procedures and institutional history
- Invest in technical training
- Implement individual development plans

Professional Development
- Focus on developing all employees to ensure skill and knowledge levels stay current
- Develop pools of employees who are at various states of readiness for promotion or new assignments
- Leadership development

Employee Retention
- Conduct Stay Interviews
- Employee Recognition
- Work/life balance
Gartner Recommendations – (Grant Thornton Review)

1. Establish and Document an Enterprise Change Management Process (Complete)
2. Establish and Document an Enterprise Configuration Control Process (In Progress)
4. Expand Staffing in Key Areas (Quality Assurance & Security) (Complete)
5. Establish and Document a Problem Management Process (In Progress)
6. Expand the Role and Responsibility of the IT Service Desk (In Progress)
7. Establish Service Level Management within Technology Services (In Progress)
8. Establish Enterprise Portfolio Management Processes (In Progress)
9. Realign the Function of the Enterprise Architecture team and Develop an IT Strategic Planning Process (Complete)
10. Rebuild the Function of the Project Management Office (In Progress)
11. Formalize a Relationship Management Organization (In Progress)
12. Move Towards a Chargeback Model for Financial Management (Evaluating)
Customer Satisfaction Results - (322 Responses)

1. Do you know how to obtain help from Technology Services? Score: 3.6
2. How easy is it to work with Technology Services? Score: 3.06
3. How would you rate your most recent experience with the TS Service Desk? Score: 3.16
4. Does Technology Services resolve your issue in a timely manner? Score: 2.76
5. Do you find Technology Services employees to be courteous and accommodating? Score: 3.51
<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
<th>Description</th>
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<td>$153,250.00</td>
<td>Internet Edge Phase II</td>
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*Green indicates project complete or significant progress has been made.*
Applications
Applications
Employee Engagement

• Accountability focus
  – 63 hires, 23 promotions, key transfers last year
  – Lost entire GIS team
• SRA – added 2 QA resources and others (DBA, Web Content, Analysts, Alfresco, etc.)
  – Gartner #4 LHF
• Increased training allocation/employee
  – $550 to $800 (45% increase)
  – Gartner #4 LHF
• Employee Recognition Program
Applications Realignment

- Removed silos, increased communication and collaboration, customer focus, standards and documentation – Gartner overall finding
- Year over year tickets - work orders 25 to 18 days, problems 10 to 7 days, 30% improvement

Cloud first

- Budget, CRM and WCMS replacements, strategy, and requirements for procurement

Created Enterprise Architecture group

- Removed technologies from team and distributed to app dev
- Focus on excellence, best practice, intake, and oversight of technology implementations
- Gartner #9 LHF
Applications
Operational Efficiency

• Release Management process
  – Application Administration team responsibility
  – Aps/Ops release calendar for 2014
  – Gartner #3 LHF

• Application Modernization
  – Holistic approach to analyze 345 applications
  – Analysis 65% done, 37 slated for decommission
  – 3 new, 35 update, 8 COTS, 32 enterprise, 34 no action

• Change Management
  – Followed by all applications teams
  – Gartner #1 LHF and largest deficiency
Applications
Agency Satisfaction

• Project Management maturity
  – Assessment (scored 2, target is 3 for 2014)
  – Project and Portfolio Management implementation
  – Gartner #8 LHF
  – Formalized intake process
  – 2011 half of projects red, currently zero, Gartner overall finding

• Safety focused Business Intelligence
  – DPD officer productivity
  – DSD jail capacity
    • Received Denver Sheriff Pride Award
• Replacement applications underway
  – Sheriff Scheduling
  – Parks and Recreation
  – Budget system
  – Customer Relationship Management
  – Web Content Management System
  – Accela
  – DSD Civil
  – DSD Vehicle Impound Facility
  – Geocortex
Applications

Citizen Satisfaction

- Ask Denver application
  - Rebranding and minor enhancements
- Access to information
  - Online checkbook and transparency site
  - 311 open data
  - Launched with 99 and 189 data sets currently
- Social Media
  - Connect Denver
  - Social Media policy participation
Customer Service

**National Citizen Survey**
- 64% of citizens would be very likely to use the web and 26% of citizens would be very likely to use a mobile application to conduct financial transactions

**Investing in web and mobile enabled applications to support “calls to clicks”**
- Ask Denver
- Web Content Management system
- Customer Relationship Management system
- DMV
- Everyone’s Denver
- Cashiering
Security & Compliance
Security & Compliance

- Accomplishments
- Challenges
- Looking Forward
Creation of the Chief Information Security Officer

Two New Leadership Functions Created
- Alignment with best practice
- Operationally independent

Chief Information Security Officer (CISO)
IT Governance Manager
Information Security (3 FTE)
- Applications & Architecture
- Threat & Vulnerability
- Infrastructure
- Process Operationalization

GRC (2 FTE & 1 Contractor)
- Governance – Policy
- Risk – Business Continuity, Process Documentation, Audit Remediation
- Compliance – Control Verification, Audit Liaison

* New position
Information Security Emphasis

- Customer-Focused
  - Shifting from “No you can’t!” to “How can we?”
- Relationships
  - Within Technology Services
  - With other agencies
- Process Maturity
Getting Started

• Assess the Environment
• Tactical Observation
• Strategic Direction
Assess the Environment

- Users are set up “like” others
- Infopath forms go to dead bit bucket
- Patch Prod before QA
- Thought we blocked that
- Thought we splashed that
- Thought we backed that up
Tactical Observation

- Tangential engagement
- Dictatorial

Strategic Direction

- Foundations
- Infrastructure gaps
Process Documentation aka “Playbooks”

- Business Continuity
- 59 Process Documents Created

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<td>Policy</td>
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<td>Policy</td>
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<td>Process</td>
<td>Technology Services Playbooks</td>
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</table>

And many, many more . . .
Creating a Vendor Account

Using the Identity Service Engine’s Vendor Account Portal is a quick way to setup vendor access to the CCD-VENDOR-WIFI wireless network. This user guide will walk you through the steps necessary to setup these accounts, and also provides instructions for modifying existing accounts.

New Account Setup:
2. Log in with supplied portal credentials. Each sponsor must use his/her own supplied credentials to login.

3. Once you are logged in, you will be presented with four options:
   a. Vendor Accounts List: This will display all previously-created vendor accounts that have neither not yet been activated or have not yet expired. Expired accounts are automatically deleted.
   b. Create Vendor Account: This is the screen where individual accounts are created.
   c. Import Vendor Accounts: This page allows you to create multiple accounts at once.
   There is a link to download a template file which is then populated with the individual user names and other details. Once populated, the information is imported on this page and the accounts are created.
   d. Settings Customization: This allows the sponsor to set personal contact details and select which page they would like for their homepage.

4. If you do not have portal credentials, send a ticket to Network Services and one will be created for you.
Audit Remediation

Network Security Management - Phase 1 Performance Audit

Police RMS IT General Controls Performance Audit

Total Remediated Items

Q1 2013: 1
Q2 2013: 14
Q3 2013: 43
Q4 2013: 49
Information Security Awareness

Be Cyber Safe this holiday season! Do not open attachments in suspicious messages.

The bad guys are working overtime this holiday season, so here's a heads-up:

- **Personal or financial information hijacked.**
- **Online retailers like Amazon.**
- **Shippers like FedEx and UPS.**

Hackers will often send messages with attachments that contain attachments. If you receive such a message, the best thing to do is to ignore it.

Closure:

- If you receive a message that looks like it was sent from Amazon.com, notice that it was automatically moved by hotmail to the junk folder. That’s your first clue that something is fishy!

If you need tracking information on a purchase you made or a delivery you're waiting for the retailer or shipping company, obtain information on your order by clicking on the attachment, but that’s what you want. And the danger to your computer, your personal information, and the City network.

If your system is infected by a virus, it may be necessary to take your computer offline and perform a full system check to prevent any further damage and loss of productivity.

If you think your computer has been infected with a virus, please call the Denver 720-337-4357 for assistance.

*Happy Holidays*
I didn’t think it applied to me . . .

<table>
<thead>
<tr>
<th>From:</th>
<th><a href="mailto:QRADAR@denvergov.org">QRADAR@denvergov.org</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sent:</td>
<td>Tuesday, December 24, 2013 12:10 PM</td>
</tr>
<tr>
<td>To:</td>
<td>Deering, Todd J - TS Office of the CIO (TSCIO); Vazquez, Ed A. - TS Office of the CIO (TSCIO); Stoner, James W - TS Office of the CIO (TSCIO); Coury, Stephen E. - TS Office of the CIO (TSCIO)</td>
</tr>
<tr>
<td>Subject:</td>
<td>Malware: Potential Cryptolocker Infection Fired</td>
</tr>
</tbody>
</table>

The following is an automated response sent to you by the QRadar event custom rules engine:

Dec 24, 2013 12:10:04 PM MST

**Rule Name:** Malware: Potential Cryptolocker

**Rule Description:**

<table>
<thead>
<tr>
<th>Source IP:</th>
<th>10.128.149.57</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Port:</td>
<td>18525</td>
</tr>
<tr>
<td>Source Username (from event):</td>
<td>n/a</td>
</tr>
<tr>
<td>Source Network:</td>
<td>WMB.Floor_10</td>
</tr>
</tbody>
</table>
Information Security

Infrastructure Goals

• Add antivirus to email gateway
  – Moving risk to the perimeter

• Protection over encrypted sessions
  – Malicious websites
  – Webmail virus protection

• Isolation of high risk systems
Antivirus at email Gateway
04-25-14
Automation – Event Correlation

• Security Information and Event Monitor (SIEM) QRadar tool runs from 15K to 20K+ events / sec
  – Takes in system events from 198 log sources:
    • domain controllers (Active Directory), PCI POS (US edirect, EZ Links, ECS), DHCP logs, appliances (Bluecoat), servers, antivirus, intrusion detection / prevention systems, anti-spam filters, Cisco ACS firewalls & switches, and growing
  – Outbound traffic to known malicious sites
Detection of Malicious Activity through network traffic analysis

<table>
<thead>
<tr>
<th>From:</th>
<th><a href="mailto:QRADAR@denvergov.org">QRADAR@denvergov.org</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>To:</td>
<td>#Infosec</td>
</tr>
<tr>
<td>Subject:</td>
<td>Malware: Outbound Connection to Malicious Website Fired</td>
</tr>
<tr>
<td>Date:</td>
<td>Monday, April 28, 2014 7:46:31 AM</td>
</tr>
</tbody>
</table>

The following is an automated response sent to you by the QRadar event custom rules engine:

**Rule Name:** Malware: Outbound Connection to Malicious Website

**Source IP:** 10.160.182.14
**Source Port:** 55221
**Source Username (from event):** n/a
**Source Network:** Parks_and_Rec.Rude_REC
**Host Name (from ePO):** n/a
Foreign Access through VPN – potentially compromised credentials

Good Morning [Name]

We received an alert this morning at 1:14 AM from our Security Information and Event Monitor (SIEM) that [Name] initiated a VPN connection from outside the country. This access originated from London.

You are listed as [Name]’s direct supervisor. Can you verify that he is in the UK?

Regards,
• Early detection of network equipment failures – device switching to backup
• Detection of network silence – when devices stop logging

---

The following is an automated response sent to you by the QRadar event custom rules engine:

May 5, 2014 1:41:14 PM MDT

Rule Name: System: Device Stopped Sending Events (Firewall, IPS, VPN or Switch) Fired
Switch
Rule Description: A device that was sending events stopped sending events for over 30 minutes
Source IP: 198.104.137.151
Source Port: 12996
Police Records Management System (RMS)

• Criminal Justice Information Services (CJIS)
  – Weekly log reviews – not being done
  – Full dump provided – 2 MB daily
  – Exception Reporting - Compliance
Microsoft Releases Security Update for Internet Explorer Use-After- Free Vulnerability

05/01/2014 04:18 PM EDT

Original release date: May 01, 2014

Microsoft has released out-of-band updates to address a critical use-after-free vulnerability in Internet Explorer versions 6 through 11, including IE versions running on Windows XP.

US-CERT recommends that users and administrators review Microsoft Security Bulletin MS14-021 and apply the necessary updates as soon as possible.
Report on Compliance

City and County of Denver has contracted with Trustwave to perform a Payment Card Industry (PCI) assessment to determine the compliance of their facilities with major Card Companies' published PCI security guidelines and requirements.

The PCI assessment process focuses solely on the security of cardholder data, whether City and County of Denver has effectively implemented information security policies and processes, and if there are adequate security measures to comply with the requirements to protect cardholder data. Additionally, the assessment reviews whether City and County of Denver is employing payment industry best-practices and provides recommendations for remediation of any non-compliant policies, processes, procedures, system configurations or vulnerabilities. This is ONLY an assessment and does NOT include professional services for remediation efforts.

As a result of this assessment, it was determined that City and County of Denver is COMPLIANT with PCI security requirements.
Compared to others . . .

• Our PCI network is segmented

• We have a host-based intrusion protection system (HIPS)
• RFP Technical Requirements

Cloud Services RFP Technical Requirements

Approved January 16, 2014

Our Vision
We will become the nation’s model for delivery of technology, media, and contact center services for local government.
Section I. Cloud Security Alliance Cloud Controls

1. Application and Interface Security

1-AIS-01 Application Security
Applications and interfaces (APIs) shall be designed, developed, and deployed in accordance with industry acceptable standards (e.g., OWASP for web applications) and adhere to applicable legal, statutory, or regulatory compliance obligations.

1-AIS-02 Customer Access Requirements
Prior to granting customers access to data, assets, and information systems, all identified security, contractual, and regulatory requirements for customer access shall be addressed and remediated.

1-AIS-03 Data Integrity
Data input and output integrity routines (i.e., reconciliation and edit checks) shall be implemented for application interfaces and databases to prevent manual or systematic processing errors, corruption of data, or misuse.

1-AIS-04 Data Integrity and Security
Policies and procedures shall be established, and supporting business processes and technical measures implemented, to ensure protection of confidentiality, integrity, and availability of data exchanged between one or more system interfaces, jurisdictions, or external business relationships to prevent improper disclosure, alteration, or destruction. These policies, procedures, processes, and measures shall be in accordance with known legal, statutory and regulatory compliance obligations.
<table>
<thead>
<tr>
<th>RESPONDENT</th>
<th>KILL CARD 1</th>
<th>KILL CARD 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10-IAM-12</td>
<td>20-CCD-01</td>
</tr>
<tr>
<td>Apex IT</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>Atos</td>
<td>PROVISIONAL</td>
<td>PROVISIONAL</td>
</tr>
<tr>
<td>Eventus Solutions Group</td>
<td>PASS</td>
<td>PROVISIONAL</td>
</tr>
<tr>
<td>KANA Software, Inc.</td>
<td>PROVISIONAL</td>
<td>PASS</td>
</tr>
<tr>
<td>NTT Data</td>
<td>PASS</td>
<td>PASS</td>
</tr>
<tr>
<td>Opus Group, LLC.</td>
<td>PROVISIONAL</td>
<td>PASS</td>
</tr>
<tr>
<td>PublicStuff, Inc.</td>
<td>Non-Respondent</td>
<td>Non-Respondent</td>
</tr>
<tr>
<td>SeeClickFix</td>
<td>PROVISIONAL</td>
<td>PASS</td>
</tr>
<tr>
<td>Vertiba</td>
<td>PASS</td>
<td>Non-Respondent</td>
</tr>
</tbody>
</table>
Other Protections

• Bluecoat – protects network from malicious sites and employees from inappropriate content

• Antivirus – runs on mail servers and endpoints

• Antispam & Antivirus – runs on email gateways
• Involvement in Community
Challenges

• Applications & Architecture consumed 1 FTE
• Security Foundations - Maturity
• Patch Management
• Workload unsustainable with current staffing
Looking Forward

- Patch Management
- Tools / Configuration Baselines
- WiFi Simplification
- Mobile Device Management
- System Isolation - VMDC
- Identity Management
- Firewall Rules
- Pivot points – server vulnerabilities
- SCADA (traffic, jails, building management)
- Expanded GRC
- Operationalizing Security Tasks
- Foundational Controls
- Disaster Recovery
Operations
Infrastructure & Operations

Employee Engagement

CTO

Agency Services
Ensure mission critical and public safety, radio and 911 team have proper level of engagement and support

Service Operations
Organizational focus on our customer-facing and support teams to provide a positive end user experience

Converged Infrastructure
Align and improve synergy on our back-end systems and data centers.
# Infrastructure & Operations
## Employee Engagement

<table>
<thead>
<tr>
<th>Beginning State</th>
<th>Target State</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No metrics</td>
<td>• Real-time, dynamic data on system availability</td>
</tr>
<tr>
<td>• No trending and / or capacity planning</td>
<td>• Alerts to the appropriate team members and managers during an incident</td>
</tr>
<tr>
<td>• Remediate once the problem is realized</td>
<td>• Metrics</td>
</tr>
<tr>
<td>• Tools in place, but not turned on and minimal alerts setup</td>
<td>• Up time on our “core”</td>
</tr>
<tr>
<td>• Reactive response</td>
<td>• Trend data on repeated failures</td>
</tr>
<tr>
<td>• High wait times on Service Desk</td>
<td>• Capacity planning on storage and bandwidth</td>
</tr>
<tr>
<td></td>
<td>• Establish and measure service level agreements (SLA) with key business partners</td>
</tr>
<tr>
<td></td>
<td>• Drive down “Keeping the Lights On” (KTLO) and increase innovation</td>
</tr>
</tbody>
</table>
## Infrastructure & Operations

### Innovation

<table>
<thead>
<tr>
<th>Man Hours</th>
<th>KTLO (75%)</th>
<th>Innovation (25%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>191,880 Hours</td>
<td>63,840 Hours</td>
</tr>
<tr>
<td>Cost</td>
<td>$6.9M</td>
<td>$2.3M</td>
</tr>
</tbody>
</table>

### KTLO (50%) & Innovation (50%)

<table>
<thead>
<tr>
<th>Man Hours</th>
<th>KTLO (50%)</th>
<th>Innovation (50%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>127,860 Hours</td>
<td>127,860 Hours</td>
</tr>
<tr>
<td>Cost</td>
<td>$4.6M</td>
<td>$4.6M</td>
</tr>
</tbody>
</table>
**Infrastructure & Operations**

**Green IT**

### Data Center

**3+ Yrs**
- 80% Virtualized
- (800 Virtual servers)
- 10G DC – Hot isle containment
- Shut down (1) crack unit
  - 10G Decrease humidity from 55% to 40%
  - 10G PUE decrease from 2.3 to 2.1
  - 10G DC environment assessment

**2013**
- WB Data Center environment assessment

**2014**
- WB DC – Cold isle containment
  - WB Target PUE decrease from 2.5 to 2.1
  - Webb DC raised temp from 65 to 70 degrees
  - Shut down (1) crack unit

**2015**
- WB DC – Upgrade to variable speed fans
  - Install temp controls to cool by zone
  - Install CRAH hood on top of crack units
  - Decrease PUE from 2.1 to 1.9

### Desktop

**3+ Yrs**
- Nightwatchman
  - 5k + workstations
  - $58k Annual Savings

**2013**
- Replaced 300 CRT monitors with flat panels
  (e.g. CRT annual energy costs = $17
  Flat Panel annual energy cost = $5.40)

**2014**
- Replace remaining 223 CRT’s with flat panels

**2015**
- Virtual Desktop Infrastructure (VDI) Pilot
  - VDI – Zero client / no moving parts
  - Use 3 watts of power / low carbon footprint solution
Infrastructure & Operations

IT Maturity – Service Operations

Change Category Types Trended by Month
Infrastructure & Operations
IT Maturity – Service Operations

Change Records by Category Per Month – CCD

- October 2013
- November 2013
- December 2013
- January 2014
- February 2014
- March 2014
- April 2014
- May 2014
- December 2014
- March 2015

Legend:
- Application
- Oracle Instance
- Server
- MSFT SQL Instance
- Software
- Network Data Center/Infrastructure
- Network
- Storage
- Telecomm
- Hardware
- Documentation
- Mobile Device
- Computer
- MSFT SQL Catalog
Changes by Application for Previous Month - CCD

- PILAR = 7
- Peoplesoft HR = 5
- Application - Generic = 4
- Denvergov Website = 4
- Peoplesoft Financials = 3
- Address Web Service = 2
- Oracle Business Intelligence Enterprise Edition (OBIEE) = 2
- ServiceNow = 2
- Denver Maps = 2
- Denvergov - e-Foreclosure Records Search = 1
- Excise & Licensing = 1
- HEAT = 1
- Infor = 1
- RMS / Versadex = 1
- SOA Suite - Safety = 1
- Sun Ray TS = 1
- Victim Assistance Case Manager = 1
Infrastructure & Operations

IT Maturity – Service Operations

Count of Assignments by Tech

Resolved Tickets by Tech

Count of Assignments by Tech

Resolved Tickets by Tech
Infrastructure & Operations

IT Maturity – Service Operations

Top 15 Call Types Received by the Service Desk Year to Date

- Desktop PC: 3,488
- Permissions: 2,483
- Reset LAN Password: 2,020
- New Employee: 1,512
- Email: 1,451
- Install Software: 1,432
- Question IT: 1,354
- Mobile Device: 1,283
- Network: 1,271
- File Share Permissions: 1,083
- Desktop: 1,024
- Laptop: 1,015
- VPN: 756
- Windows on Desktop or Laptop: 730
- Total Calls not in Top 15: 710

Top 15 Server Call Types Resolved by the Service Desk Year to Date

- Permissions: 1,066
- Question IT: 1,055
- Desktop PC: 844
- Email: 807
- Mobile Software: 709
- New Employee: 591
- Desktop: 425
- File Share Permissions: 392
- Active Directory: 368
- Software: 370
- Helpdesk: 236
- Remote Support: 198
- Remote User Access: 77
- Server: 36

Total Calls Resolved: 19,800
### Phases for NOC Implementation

**Phase I: Planning & Testing**
This phase will encompass system discovery and planning, test environment setup, needs determined (software, hardware, resources, etc.).

**Phase II: Up and Down, Server and Services**
Once Solarwinds is installed discovery is run via PING and SNMP so critical server and services can be monitored.

**Phase III: End User Experience:**
This will evolve us to capturing, reporting and measuring our customers experience on key systems.

**Phase IV: Application & Database**
This will focus on adding in application and database reporting, alerting, and detail alerts via WMI.

**Phase V: Reporting / Dashboarding**
Although we will be pulling reports. This phase will focus on “ease of use” and dashboarding of key data.

**Phase VI: Installation of Advanced Tools**
Advanced Network and Database monitoring and management tools to be installed and configured.

---

**Q1 & Q2 2014**

**Q2 & Q3 2014**

**Q4 2014 & Q1 2015**

**Q1 & Q2 2015**

**Q3 & Q4 2015**
311 Contact Center
311 Contact Center
Customer Experience & Satisfaction

• 2013 Citizen Survey

<table>
<thead>
<tr>
<th></th>
<th>311</th>
<th>CCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Courtesy</td>
<td>85%</td>
<td>75%</td>
</tr>
<tr>
<td>Knowledge</td>
<td>77%</td>
<td>76%</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>76%</td>
<td>70%</td>
</tr>
</tbody>
</table>

• Effective UI Phone Survey - “311 is highly successful/accessible”
• RNO-DPD Commander meetings-Citizen Advisory Boards
• DPS Job Fair/CSA Job Fair
• Mediation (Citizen to Citizen and Citizen to Agency)
• Customer Experience Initiative (Calls to Clicks)
• Social media – Facebook 100 followers, Twitter 600 followers.
• Process improvement committees (Agency Interactions, Rewards & Recognition, Resource Management and Training) 2013 – 26 initiatives, 2014 – 33 initiatives

• Employee/agency partner engagement – 311 Specialists, Cross training, Agency visits

• Training – 2013 over 3,000 hours (100 hours per employee including agency, customer service and personal improvement sessions) PEAK current = 4 black belts, 3 green belts, YE 8 black 15 green
• Skill Base routing/Queue
  Announcer June 2013
• Training splits – 311 and Finance
• Rapid Improvement Events
  – ACC
  – MMJ
  – CDOT
• Engage recording system – Lead agents save 50 hrs/wk QA prep = $46,952 soft dollar savings/yr
• Work Force Management July 2014
  – Staff modeling (for any agency with a call queue)
  – Schedule adherence reports
• CRM January 2015
Denver Media Services
• Generate 10% of Media Services budget through outside sponsorships. Goal - $110,000
  – Create new content that will attract sponsorships
    • $20,000 commitment for Denver Loft Sessions

• Become the preferred provider of video services for the City and County of Denver.
  – Create new content for agencies, marketing a “Try Before You Buy” model
    • Wireless PSA
Our Vision

We will become the nation’s model for delivery of technology, media and contact center services for local government.