BERKELEY CITY COUNCIL BUDGET & FINANCE COMMITTEE REGULAR MEETING

BERKELEY CITY COUNCIL SPECIAL MEETING

Thursday, April 25, 2019
2:00 PM

2180 Milvia Street, 6th Floor - Redwood Room

Committee Members:

Councilmembers Rashi Kesarwani, Cheryl Davila, and Lori Droste

AGENDA

Roll Call

Public Comment on Non-Agenda Matters

Minutes for Approval

Draft minutes for the Committee's consideration and approval.

1.   Minutes - March 28, 2019

Committee Action Items

The public may comment on each item listed on the agenda for action as the item is taken up. The Chair will determine the number of persons interested in speaking on each item. Up to ten (10) speakers may speak for two minutes. If there are more than ten persons interested in speaking, the Chair may limit the public comment for all speakers to one minute per speaker. Speakers are permitted to yield their time to one other speaker, however no one speaker shall have more than four minutes.

Following review and discussion of the items listed below, the Committee may continue an item to a future committee meeting, or refer the item to the City Council.

Committee Action Items

2. **Refer to the City Manager to Designate Election Day as a City Holiday**
   From: Councilmembers Robinson, Davila, and Hahn
   Referred: March 11, 2019
   Due: September 15, 2019
   Recommendation: Refer the City Manager to designate Election Day as a City Holiday.
   Financial Implications: See report
   Contact: Rigel Robinson, Councilmember, District 7, 981-7170

3. **Various funding sources in the Public Works Department and the Parks, Recreation and Waterfront Department as well as a process for allocating funding (Street Lighting, Tree Trimming and Traffic Circles)**

4. **Purchase Order with Carahsoft Technology Corporation: Using General Services Administration (GSA) Schedule for hardware, software, and services related to the Data Center Infrastructure Upgrade and Disaster Recovery Implementation**
   From: City Manager
   Recommendation: Adopt a Resolution authorizing the City Manager to increase spending authority with Carahsoft Technology Corporation for the purchase of server hardware, software, and related services for a data center upgrade and disaster recovery implementation, utilizing pricing established by the General Services Administration (GSA), for a total amount not to exceed $1,678,953 for the period May 15, 2019 to June 1, 2024.
   Financial Implications: See report
   Contact: Savita Chaudhary, Information Technology, 981-6500

5. **Fire Department Budget Presentation**
   From: City Manager
   Contact: David Brannigan, Fire, 981-3473

Unscheduled Items

These items are not scheduled for discussion or action at this meeting. The Committee may schedule these items to the Action Calendar of a future Committee meeting.

Adjournment

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This is a meeting of the Berkeley City Council Budget & Finance Committee. Since a quorum of the Berkeley City Council may actually be present to discuss matters with the Council Budget & Finance Committee, this meeting is being noticed as a special meeting of the Berkeley City Council as well as a Council Budget & Finance Committee meeting.

Written communications addressed to the Budget & Finance Committee and submitted to the City Clerk Department will be distributed to the Committee prior to the meeting.

This meeting will be conducted in accordance with the Brown Act, Government Code Section 54953. Any member of the public may attend this meeting. Questions regarding this matter may be addressed to Mark Numainville, City Clerk, 981-6900.

 COMMUNICATION ACCESS INFORMATION:
This meeting is being held in a wheelchair accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services specialist at 981-6418 (V) or 981-6347 (TDD) at least three business days before the meeting date. Attendees at public meetings are reminded that other attendees may be sensitive to various scents, whether natural or manufactured, in products and materials. Please help the City respect these needs.

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I hereby certify that the agenda for this special meeting of the Berkeley City Council was posted at the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way, as well as on the City's website, on April 18, 2019.

Mark Numainville

Mark Numainville, City Clerk

Communications
Communications submitted to City Council Policy Committees are on file in the City Clerk Department at 2180 Milvia Street, 1st Floor, Berkeley, CA.

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BERKELEY CITY COUNCIL BUDGET & FINANCE COMMITTEE REGULAR MEETING MINUTES

BERKELEY CITY COUNCIL SPECIAL MEETING MINUTES
Thursday, March 28, 2019
2:00 PM

2180 Milvia Street, 6th Floor - Redwood Room

Committee Members:

Councilmembers Rashi Kesarwani, Cheryl Davila, and Lori Droste

Roll Call: 2:03 p.m.

Present: Kesarwani, Droste

Absent: Davila

Councilmember Davila present at 2:04 p.m.

Election of Chair: Councilmember Droste nominated to serve as Chair.

> **Action:** M/S/C (Kesarwani/Droste) to elect Councilmember Droste as Chair of the Budget & Finance Committee.
> **Vote:** Ayes – Kesarwani, Droste; Noes – None; Abstain – Davila; Absent – None.

Adoption of Regular Meeting Schedule

> **Action:** M/S/C (Droste/Kesarwani) to establish a regular meeting schedule of the Budget & Finance Committee as the second and fourth Thursday of each month at 2:00 p.m., and schedule special meetings for department budget presentations on May 1, 2019, from 9:30 a.m. – 4:00 p.m. and May 3, 2019, from 9:30 a.m. – 2:00 p.m.
> **Vote:** All Ayes.

Public Comment on Non-Agenda Matters – 3 speakers

Minutes for Approval

Draft minutes for the Committee's consideration and approval.

1. Minutes for Approval – November 26, 2018

Action: M/S/C (Kesarwani/Droste) to post the minutes from November 26, 2018, as an unofficial record of the meeting due to a change in membership for the committee pursuant to Resolution No. 68,744-N.S.
Vote: Ayes - Kesarwani, Droste; Noes – None; Abstain – Davila; Absent – None.

Committee Action Items

The public may comment on each item listed on the agenda for action as the item is taken up. The Chair will determine the number of persons interested in speaking on each item. Up to ten (10) speakers may speak for two minutes. If there are more than ten persons interested in speaking, the Chair may limit the public comment for all speakers to one minute per speaker. Speakers are permitted to yield their time to one other speaker, however no one speaker shall have more than four minutes.

Following review and discussion of the items listed below, the Committee may continue an item to a future committee meeting, or refer the item to the City Council.

2. Biennial Budget Process
    a. **Timeline**
    b. **Meeting dates**
    c. **Topic areas**
    d. **Department Budget Presentations Timeline**

Action: M/S/C (Droste/Kesarwani) to have department presentations in order of department magnitude (large to small), and a separate CIP presentation.
The presentations should include the following:
- organization charts including total FTEs and vacancies;
- for Public Works, a detail of transportation staffing and detailed information on streets and other major infrastructure;
- detailed information for all departments funding homelessness programs;
- budget for 311;
- lists of outcomes for current and previous years;
- budget actuals for current year including the difference and reasons;
- explanation of how to account for and accommodate top referrals from Council;
- information on staffing in each department in the following areas: staffing capacity, consultants and temporary staffing, current vacancy rate and rate from previous year including long term vacancies (more than 1 year), and recruitment and retention statistics.

Vote: All Ayes.

Committee Action Items

3. **Various funding sources in the Public Works Department and the Parks, Recreation and Waterfront Department as well as a process for allocating funding (Street Lighting, Tree Trimming and Traffic Circles)**

    Action: Continued to April 25, 2019.

4. **Refer to the City Manager to Designate Election Day as a City Holiday**
   From: Councilmembers Robinson, Davila, and Hahn
   Referred: March 11, 2019
   Due: September 15, 2019
   Recommendation: Refer the City Manager to designate Election Day as a City Holiday.
   Financial Implications: See report
   Contact: Rigel Robinson, Councilmember, District 7, 981-7170

    Action: 2 speakers. The committee discussed revisions, including maintaining 13 total holidays, exempted departments, payroll considerations (annual consistency), meet and confer requirements, and to send the item to the 2x2 committee, with the author and continued the item to April 25, 2019.

Unscheduled Items

These items are not scheduled for discussion or action at this meeting. The Committee may schedule these items to the Action Calendar of a future Committee meeting.

Adjournment

    Action: M/S/C (Davila/Droste) to adjourn the meeting.
    Vote: All Ayes.

Adjourned at 3:40 p.m.

I hereby certify that this is a true and correct record of the Budget & Finance Committee meeting held on March 28, 2019.

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April Richardson, Assistant City Clerk

CITY OF BERKELEY CITY COUNCILMEMBER RIGEL ROBINSON DISTRICT 7

02

To: Honorable Mayor and Members of the City Council

From: Councilmembers Rigel Robinson, Cheryl Davila and Sophie Hahn

Subject: Refer to the City Manager to Designate Election Day as a City Holiday

RECOMMENDATION
Refer the City Manager to designate Election Day as a City Holiday.

BACKGROUND
Under current election law, Election Day occurs on the first Tuesday after the first Monday in November of each even-numbered year. Election Day is not on the list of federal, State, or City holidays. Since Election Day falls on a weekday, getting to the polls can be difficult for people who have to attend school or work. The City of Berkeley has endorsed California Assembly Bill 177, which would make Election Day a state holiday. Sandusky, a small city in Ohio, recently made national headlines by switching Columbus Day and Election Day as local holidays. Taking similar steps in Berkeley would make voting easier and more accessible for many City employees, and would reinforce the City's commitment to the importance of democracy.

The City Manager should consider offsetting the addition of an Election Day holiday by eliminating another. One option is to celebrate Lincoln's Birthday concurrently with President's Day. Lincoln's Birthday occurs in the middle of the week on most years, with President's Day less than a week later. Since General Elections only occur every other year, there are several options to maintain the average number of City holidays per year. One would be to designate two City holidays in election years, one for the March primary and one for the November general election, but none in odd numbered years. Another option would be to designate the first Tuesday after the first Monday of November as a holiday for all years, even on years where there is no general election. On odd numbered years, the City could recognize that Tuesday as "Democracy Day" or something similar.

Should federal or state laws change to require that the City give its employees Election Day off, this change should revert such that the total number of holiday's increases by one. Rather than redesignating Lincoln's Birthday as a holiday, a Cesar Chavez holiday should be designated.

Staff should come back to Council with a recommendation and should begin any necessary meetings with union representation allowing enough time for the proposed changes to come into effect for the 2020 primary election.

FINANCIAL IMPLICATIONS

If the addition of a City holiday on Election Day is offset by the elimination of another City holiday, there would be few financial implications.

ENVIRONMENTAL SUSTAINABILITY
No impact.

CONTACT PERSON
Councilmember Rigel Robinson, (510) 981-7170
Rachel Alpert, Intern

No Material Available for this Item

There is no material for this item.

City Clerk Department
2180 Milvia Street
Berkeley, CA 94704
(510) 981-6900

The City of Berkeley, Budget & Finance Policy Committee Webpage:
https://www.cityofberkeley.info/Clerk/Home/Policy_Committee__Budget___Finance.aspx

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04

Office of the City Manager

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Savita Chaudhary, Director, Department of Information Technology

Subject: Purchase Order with Carahsoft Technology Corporation: Using General Services Administration (GSA) Schedule for hardware, software, and services related to the Data Center Infrastructure Upgrade and Disaster Recovery Implementation

RECOMMENDATION

Adopt a Resolution authorizing the City Manager to increase spending authority with Carahsoft Technology Corporation for the purchase of server hardware, software, and related services for a data center upgrade and disaster recovery implementation, utilizing pricing established by the General Services Administration (GSA), for a total amount not to exceed $1,678,953 for the period May 15, 2019 to June 1, 2024.

FISCAL IMPACTS OF RECOMMENDATION

Funding for this project in the amount of $1,678,953 is available in the Department of Information Technology's Fiscal Year (FY) 2019 FUND$ Replacement, Computer Replacement, Capital Improvement, General Fund, Employee Training Fund, and IT Cost Allocation. Spending for software maintenance in future years is subject to Council approval of the proposed citywide budget and annual appropriations ordinances.

FY 2019: Summary

Amount	Description
$1,638,503	Total FY 2019 Hardware
$40,450	Total FY 2019 Professional Services
$1,678,953	**Total FY 2019 Hardware and Services**

FY 2019: Hardware and Software

Amount	Description
$400,000	FUND$ Replacement: 503-35-362-376-0000-000-412-664140-
$571,000	Computer Replacement: 675-35-362-376-0000-000-473-664140-
$365,860	Capital Improvement Fund: 501-35-362-376-0000-000-412-664140-
$301,483	IT Cost Allocation Fund: 680-35-361-000-0000-000-473-664140-
$1,638,503	Total FY19: Hardware and Software

Carahsoft Technology Corporation: Data Center Infrastructure Upgrade,   CONSENT CALENDAR
Disaster Recovery Installation and Implementation   May 14, 2019

FY 2019: Professional Services

$30,650	IT Cost Allocation Fund: 680-35-361-000-0000-000-472-612990-
$9,800	Employee Training Fund: 146-35-361-000-0000-000-412-612990-
$40,450	Total FY19: Implementation Services

CURRENT SITUATION AND ITS EFFECTS
The City's current server and storage environment has very limited redundancy and disaster recovery (DR) in place, leaving daily operations and services vulnerable to a total outage or a significant interruption after a local disaster, such as an earthquake. Though the City can handle a single server failure, we cannot currently stay up and running when multiple locations are impacted (e.g., when 2180 Milvia and Public Safety are experiencing issues). There is also minimal physical redundancy, with the exception of some of our Public Safety systems. And, the existing platform: (i) lacks scalability, (ii) requires multiple levels of support to manage and (iii) has no onsite or offsite disaster recovery capability.

In addition to lacking DR, the current solution is setup in a 3-tier model (virtual environment, servers, and backend storage) – an outdated technology that requires high overhead and costly to maintain. It is time consuming to deploy new applications and it lacks the stability needed for our mission critical applications. Department of Information Technology (DoIT) staff estimates that standard maintenance and support of these environments takes up an average of 8 staff hours a week or 400 hours a year during working hours and approximately 40-50 hours of additional overtime per year. Vendor support for the 3-tier model is also a concern since each tier in the model has a different support supplier, contact mechanism, and fulfillment approach. This regularly results in delays as well as frequent escalations. Depending on the situation, multiple vendors may be involved to support issue resolution which results in support delays.

In contrast, Nutanix Hyper Converged Infrastructure, storage and disaster recovery solution will provide a simple and easy infrastructure that significantly reduces the DoIT staff overhead. A Hyper-Converged Infrastructure (HCI) combines the 3-tiers from the other infrastructure model into a single one. That, in turn, gives us a single, "one-stop-shop" view, freeing us from procedural complexity for support and maintenance, and resulting in fewer and a lower likelihood of errors. The simplified infrastructure is also more efficient in its vendor support, as one support team supports the entire environment.

In terms of disaster recovery (DR), the new HCI solution (called "Xi Leap") will provide full redundancy between the data centers at City Hall and the Public Safety Building. It will also provide a secure offsite DR location so that, in the event of a major local disaster (e.g., an earthquake or mass fire), the City will be able to maintain daily operations uninterrupted. The contract further aids the City in being prepared, allowing us to test the HCI's DR capabilities every quarter. It is built secure, it provides data encryption and other

cyber security controls by default, and its security is incident-tested. This is one of the core goals of the Cyber Resilience Plan.

In summary, some of the expected benefits of the solution are:

1. Reduces our datacenter footprint, avoiding costs tied to provisioning storage while dynamically expanding resources when and as needed
2. Incorporates a scalable infrastructure that simultaneously reduces deployment time from days to hours, improving resource allocation of DoIT staff
3. Reduces our server rack space, power and cooling requirements, producing power savings and reducing our carbon footprint
4. Achieves DoIT operational and cost efficiencies along with improved application performance by leveraging software-defined technology – the latest technology
5. Provides a single management console with high availability and improved failover while also creating disaster recovery (DR) capabilities
6. Allows both data centers to replicate between themselves with an increased capacity that is large enough to host both of them in the event one fails
7. Provides DR offsite in case both datacenters were to go down and we need to activate the EOC and the DR offsite
8. Increases datacenter, server and data security
9. Ensures and enhances the delivery of services to the community
10. Decreases standard maintenance and support delays and overall time to complete

Datacenter Infrastructure Upgrade, Disaster Recovery installation and Implementation is a Strategic Plan Priority Project, advancing our City's strategic goal to provide state-of-the-art, well-maintained infrastructure, amenities, and facilities.

BACKGROUND
The Department of Information Technology (DoIT) supports the City's core technology 3-tier server and storage infrastructure and staff spends a great deal of time in supporting and maintaining our infrastructure – keeping it configured correctly, optimized and available 24X7. Historically we have purchased various best of the breed solutions to meet our individual project needs which lacks the flexibility and scalability needs for the future projects. The staff uses multiple consoles and interfaces to keep the systems operational and for ongoing monitoring.

The DoIT staff researched various 3-tier and hyper-converged storage technologies, with a priority towards finding a solution that would provide both local and off-site disaster recovery, and ideally with the same vendor to reduce the complexity of the solution, simplify datacenter operations while improving service delivery and to ensure seamless support in the event of a disaster, without increasing the cost of operations.

Nutanix has a single management dashboard for its hypervisor, server hardware, storage, and DR management. The current 3-tier systems have separate applications to manage the hypervisor, storage, server hardware and DR tools.

Staff Time - Currently it takes three separate maintenance windows to upgrade current 3-tier systems compared to one maintenance windows for Nutanix. Nutanix has the ability to do one button upgrades for all software and components. The staff time savings are estimated at 1/3 staff member (FTE) time which can be reallocated to the other infrastructure projects as identified in the City's Digital Strategic Plan (DSP) and Cyber Resilience efforts.

Server Room Space - The current 3-tier systems at the Civic Center Data Center (CCDC) uses 24U of rack space compared to 16U needed for the Nutanix servers or 33% less rack space thus resulting in power savings.

Power and Cooling - There are 20 existing systems at the CCDC compared to 8 needed for Nutanix. Each system uses 2 power cables. For instance, average usage of one server is 850 watts per hour with an average of 7446kWh (kilowatt hour) per year. The existing power consumption comes to 148,920 kWh/year compared to 59,568 kWh/year needed for the Nutanix systems or 60% less power requirement thus resulting in power savings and reducing carbon footprint. According to the U.S. Energy Information Administration (https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a), as of December 2018 the average rate for electricity is 19.44 cents per kWh thus bringing the operational power costs down from $28,950.05 to $11,580.02 annually

Adding new hosts and clusters takes many hours and is very complex to integrate into existing environment. Issues with current controllers turning off and long support times cost the city staff hundreds of hours making sure the systems stayed redundant and online. We documented 6 incidents with high impact since 2015. We began to log these in 2015 after having multiple issues.

Current solution did not give a seamless way to failover during a data center outage and had no way to send our data to a remote provider without having the same infrastructure and storage systems which is not feasible financially to maintain twice the infrastructure.

Within the Nutanix solution we will have full encryption, local DR (DR between both CCDC and Public Safety Building (PSB) data centers), remote DR (to Nutanix East Coast Site), data compression and data deduplication all from the same provider.

Nutanix provides one call support for all components purchased. This includes the hardware, hypervisor, and software (Encryption, compression, DR (LEAP and Xi LEAP) and deduplication). During our research San Mateo County said "The support is excellent and Nutanix called them when a drive was failing and sent it out automatically". Our

current vendor on the other hand waits for us to call to get support and fix, this has taken over 16 hours in few cases.

After comparing different options, including looking at the ease of support and maintenance, the continuity of support in the event of a disaster, and speaking with other local jurisdictions about their storage and disaster recovery solutions (BART, City of San Mateo, California Public Utilities Commission), the City intends to move forward with a Nutanix solution. Nutanix provides both local and offsite disaster recovery from a single vendor, and with a hyper-converged solution that simplifies support and maintenance.

ENVIRONMENTAL SUSTAINABILITY
The Nutanix hyper-converged solution is a simplified and streamlined design compared to a typical 3-tier solution, reducing the 60% power consumption reduction for equipment and 50% reduction in hardware space required for both data centers, which has a direct reduction in power consumption and server room cooling requirements. This supports the reduction of carbon footprint and the goals of the City's Climate Action Plan.

RATIONALE FOR RECOMMENDATION
Nutanix is an industry leader in the hyper-converged market, and have received high marks for customer service and support when compared with other hyper-converged and 3-tier vendors in the marketplace. Department of Information Technology (DoIT) staff consulted with BART, San Mateo County, and the California Public Utilities Commission, all of whom use the Nutanix solution. San Mateo County reported overall system stability and a reduction in support costs. BART reported a 50% reduction in support time for IT staff. Staff recommends the Nutanix hyper-converged solution as the solution best met the City's operational, technological, and fiscal requirements

ALTERNATIVE ACTIONS CONSIDERED
DoIT staff researched multiple 3-tier and hyper-converged solutions. 3-tier solutions proved to have higher administrative and support costs, and require more staff time to support and maintain when compared with hyper-converged solutions. In the hyper-converged space, the Nutanix solution provided both local and offsite disaster recovery with a single vendor, which satisfies the two main requirements of providing both local and offsite disaster recovery, as well as reduced support and maintenance costs, and continuity of support in the event of a disaster. In addition the City would not yield better pricing compared to what is achieved through Carahsoft Technology Corporation within the structure of the GSA agreement.

CONTACT PERSON
Savita Chaudhary, Director, Department of Information Technology, 510-981-6541

Attachments:
1: Resolution

RESOLUTION NO. ##,###-N.S.

Carahsoft Technology Corporation: Using State Cooperative General services Agreement for Data Center Infrastructure Upgrade, Disaster Recovery Installation and Implementation

WHEREAS, the City of Berkeley's core infrastructure is 3-tier based and multiple vendor technologies are implemented. Nutanix Hyper Converged Infrastructure, storage and disaster recovery solution, will provide a hyper-converged, or "1-tier" infrastructure that will significantly reduce administration and support time for Department of Information Technology staff; and

WHEREAS, after comparing different options, including looking at the ease of support and maintenance, the continuity of support in the event of a disaster, and speaking with other local jurisdictions about their storage and disaster recovery solutions, the City intends to move forward with a Nutanix solution. Nutanix provides both local and offsite disaster recovery from a single vendor, and with a hyper-converged solution that simplifies support and maintenance; and

WHEREAS, by utilizing existing GSA pricing schedules, the City of Berkeley is able to take advantage of pre-negotiated prices, economies of scale, and increased efficiencies; and

WHEREAS, funding for this project in the amount of $1,678,953 is available in the Department of Information Technology's Fiscal Year (FY) 2019 FUND$ Replacement, Computer Replacement, Capital Improvement, General Fund, Employee Training Fund, and IT Cost Allocation, spending for software maintenance in future years is subject to Council approval of the proposed citywide budget and annual appropriations ordinances

NOW THEREFORE, BE IT RESOLVED by the Council of the City of Berkeley that the City Manager is authorized to approve purchase orders with Carahsoft Technology Corporation for the purchase of server hardware, software, and related services for a data center upgrade and disaster recovery implementation, utilizing pricing established by the General Services Administration (GSA), for a total amount not to exceed $1,678,953 for the period May 15, 2019 to June 1, 2024.

PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Safeguarding City Services
through Hyperconvergence and Disaster Recovery

PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Introduction

Background Information

Current Challenges and Risks

Next Steps

Q&A

PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Introduction…

(1) Update Datacenters, Switches & Storage

(2) Reduce Complexity, Time, Energy & Costs

(3) Add Disaster Recovery & Flexibility

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PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION
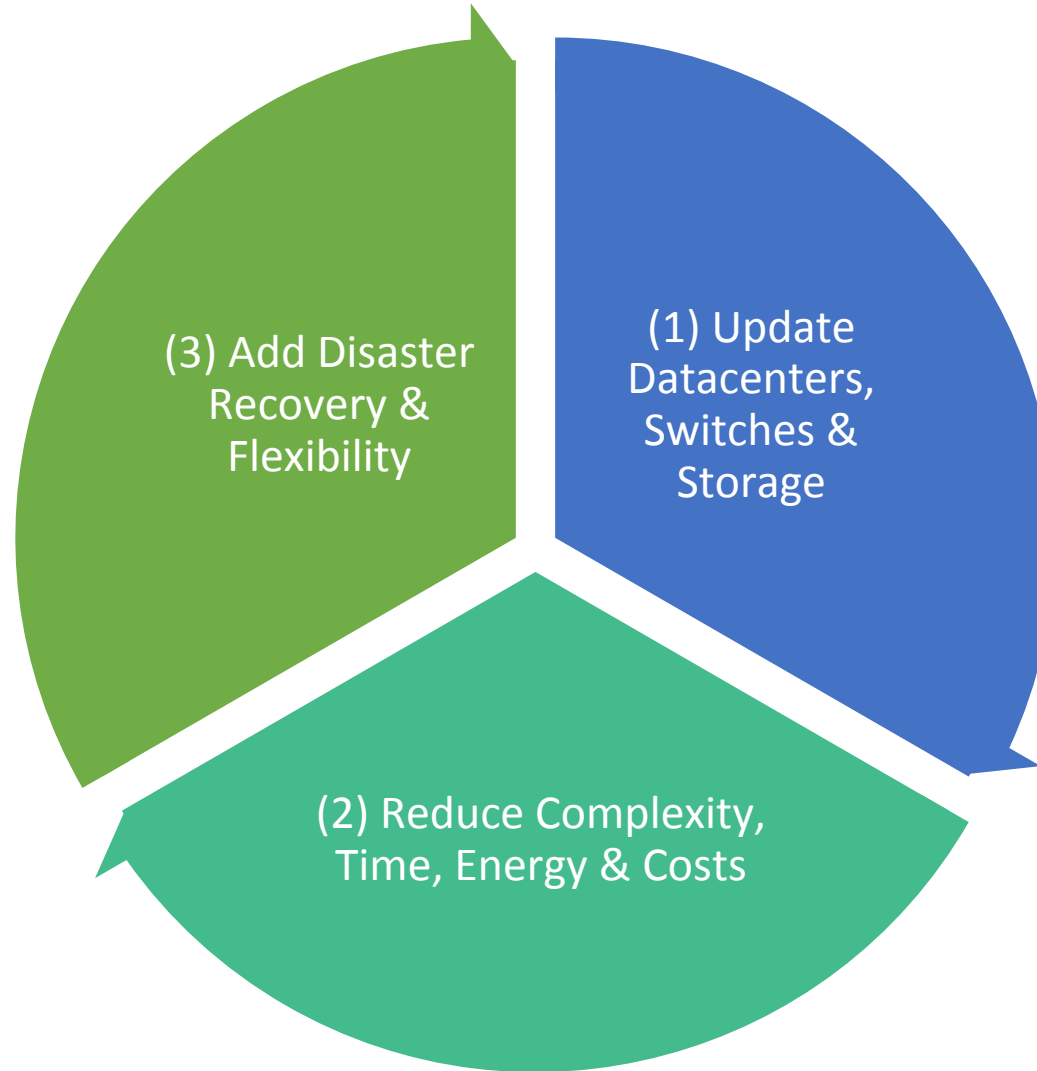
Background Information

Data Center	• Core IT Infrastructure • Servers, Switches, Storage
Traditional Data Centers	• Date back to mainframes and were all physical • Had to be 3-tiered
Virtualization	• 2003-2011 • Continued to be 3-tiered
Hyperconvergence	• Cloud, and Hybrid – all 3 are "software-defined" designs • 1-tiered infrastructure

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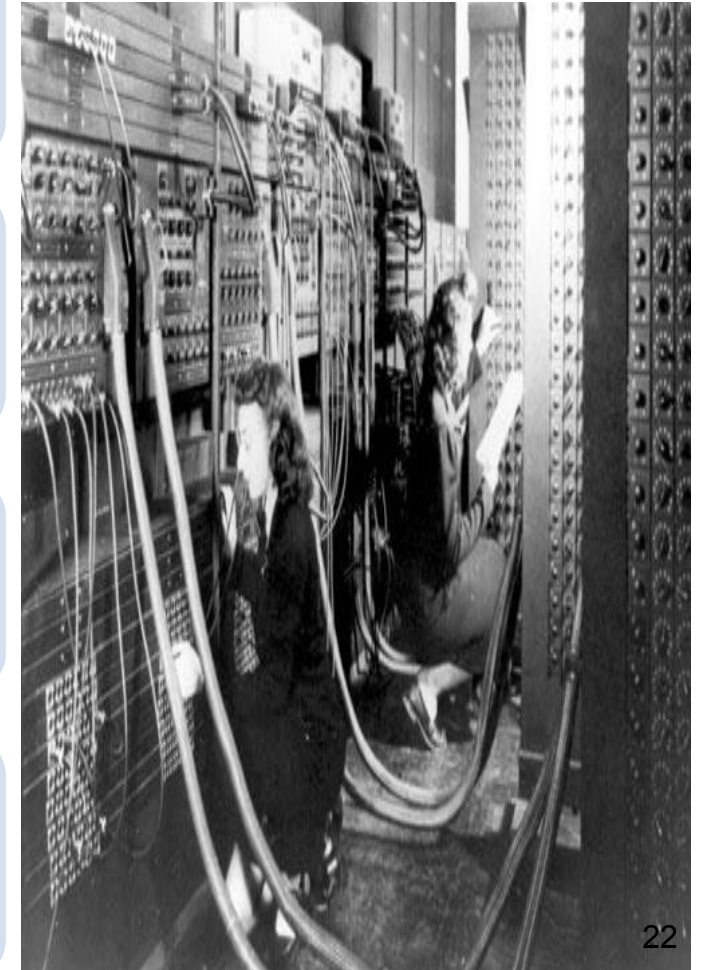
Risks

Disasters are not "if" but "when"

- Berkeley is within the Hayward fault line
  - A majority of the City would incur severe damage during a 7.0 quake
- A singular datacenter fire or building electrical issue puts the City's services and applications at risk:
  - Response
  - Phones
  - Computers, Networks, & Internet
- Additional Risks:
  - Cyber Attack
  - Human Error

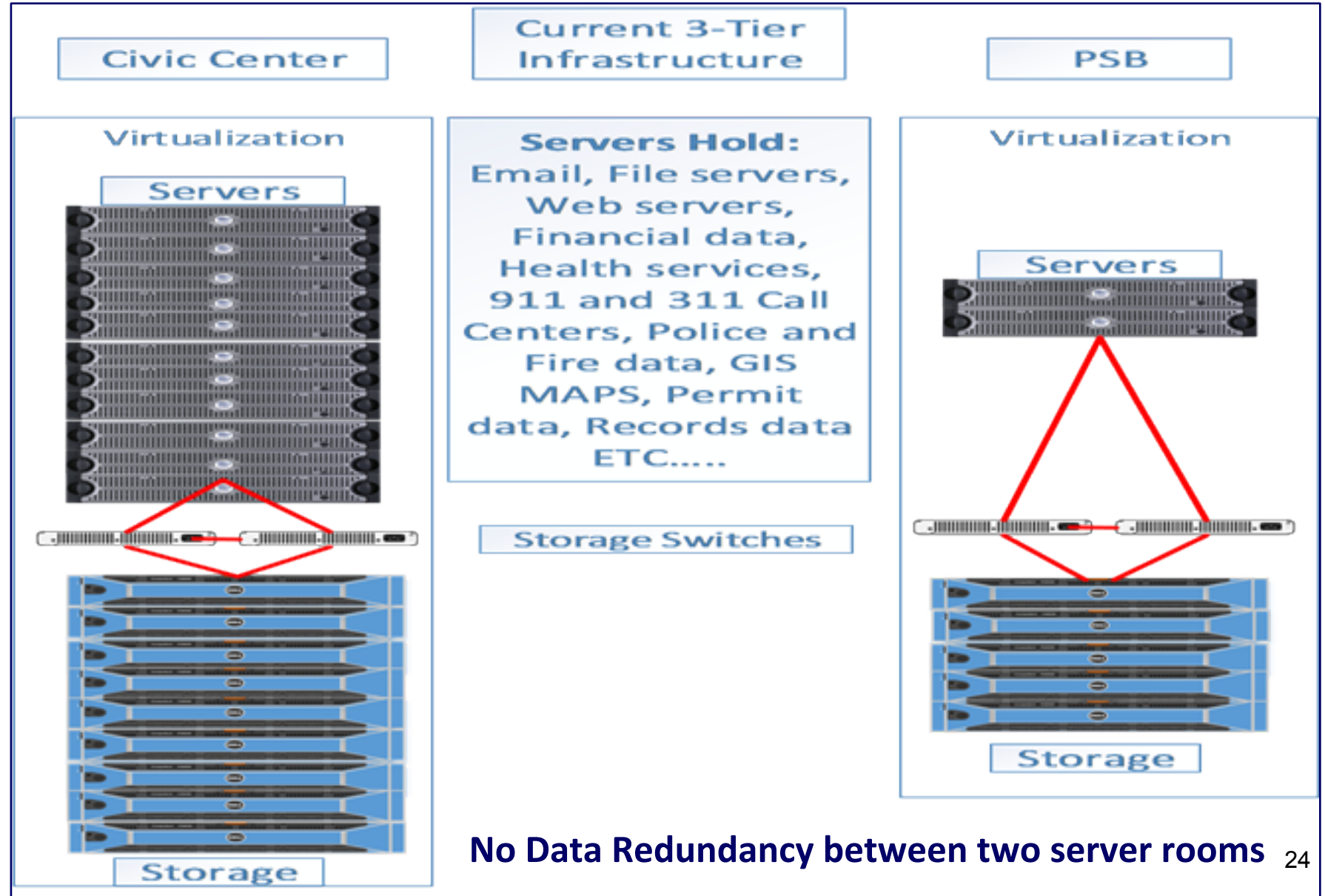**...resulting in delays or even outages, & not serving our community members**
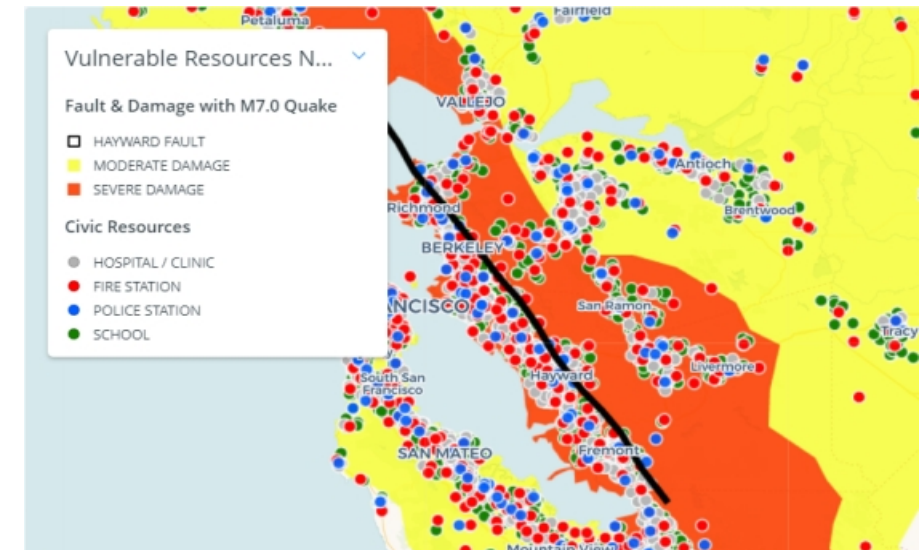
Vulnerable Resources N...

Fault & Damage with M7.0 Quake
- ☐ HAYWARD FAULT
- MODERATE DAMAGE
- SEVERE DAMAGE

Civic Resources
- ● HOSPITAL / CLINIC
- ● FIRE STATION
- ● POLICE STATION
- ● SCHOOL

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PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Current Setup

Tier-1:
Server
Vendors A & B

Tier-2:
Storage Switches
Vendor C, D, E

Tier-3:
Storage Vendor F

Civic Center

Current 3-Tier Infrastructure

PSB

Virtualization

Servers

Servers Hold:
Email, File servers, Web servers, Financial data, Health services, 911 and 311 Call Centers, Police and Fire data, GIS MAPS, Permit data, Records data ETC.....

Virtualization

Servers

Storage Switches

Storage Switches

Storage

Storage

No Data Redundancy between two server rooms

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Current Challenges

Large Footprint

- Limited physical redundancy
- Lack of scalability
- High power and cooling costs

Aging Infrastructure

- Current infrastructure is at end of life, replacement is required
- Constant support issues due to performance and failing components
- Additions are complex to integrate

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PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Current Dashboard

PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Next Steps

PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Hyperconverged Infrastructure

Civic Center

Virtualization

Servers & Storage

HyperConverged Infrastructure

Enables data redundancy between two server rooms

Servers Hold:
Email, File servers, Web servers, Financial data, Health services, 911 and 311 Call Centers, Police and Fire data, GIS MAPS, Permit data, Records data ETC.....

PSB

Virtualization

Servers & Storage

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PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Hyperconverged Infrastructure

Single Vendor	Full Physical Redundancy	Scalable Infrastructure	Power Savings

Decreased Power and Cooling	Staff Time Savings	Improved Service Delivery

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PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Instant and Flexible Disaster Recovery

Local DR Failover Between Datacenters

Remote DR Failover

Civic Center
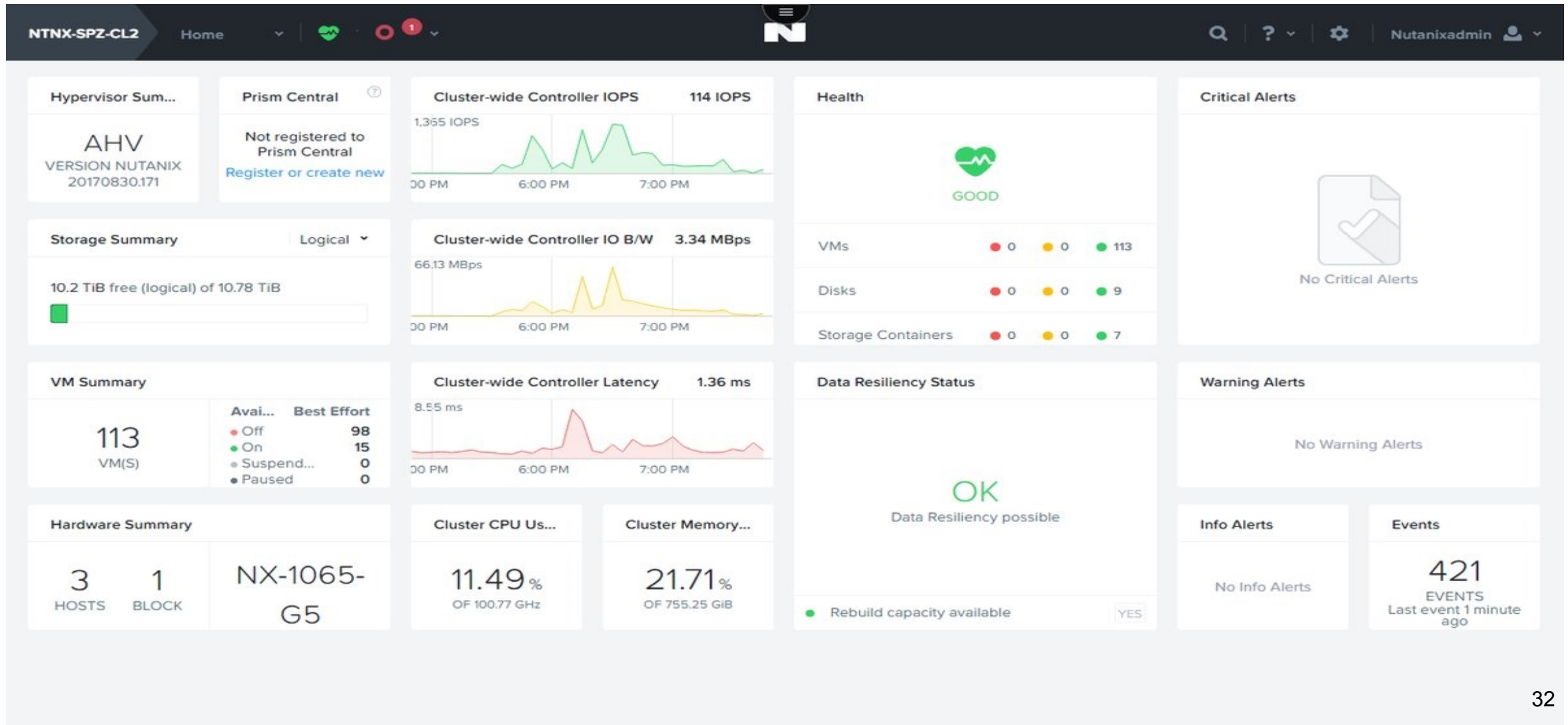
Public Safety

Nutanix
Eastern Site
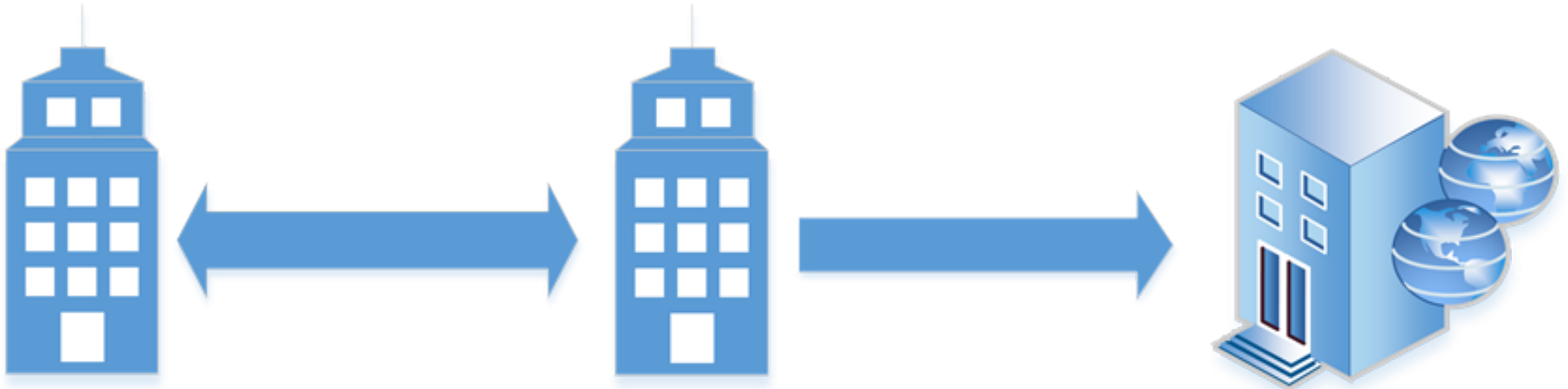
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PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Cyber Resilient Design

Full-Stack Security Development Lifecycle

Repeat → Assess → Measure

Update ← Test ← Report

Built Right

Proven

Security Certifications

NIST · SUITE B · FIPS VALIDATED 140-2

Survives

Automated Validation and Self-healing

Integrated DR

Protected

Ecosystem

Firewall · Anti-Malware · Anti-Virus

Encryption · Key Management · Micro-Segmentation

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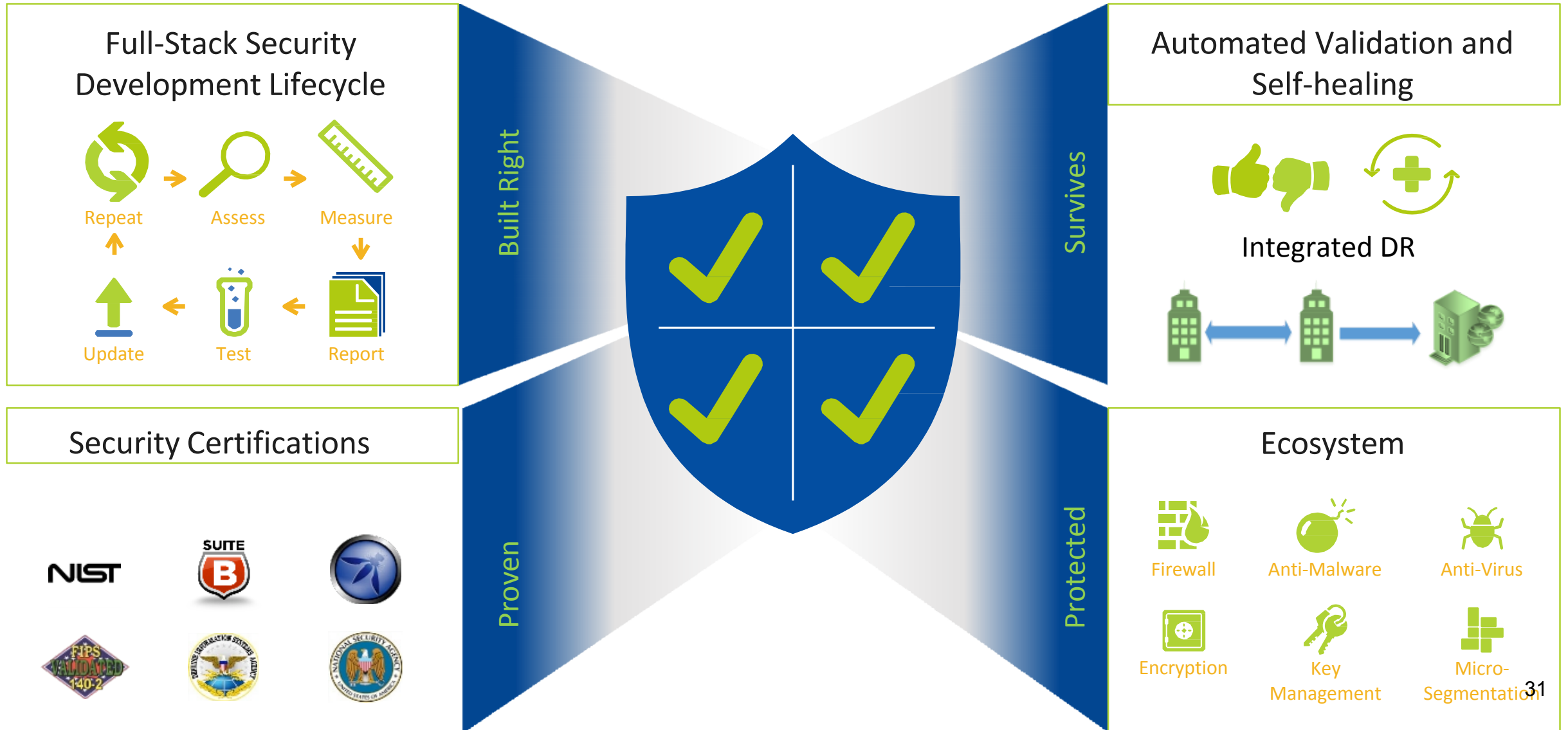
PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Proposed Dashboard

PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Summary

Disaster Recovery

Reduced Carbon Footprint

Single Dashboard

Improved Service Delivery

Flexibility

Improved Employee Productivity

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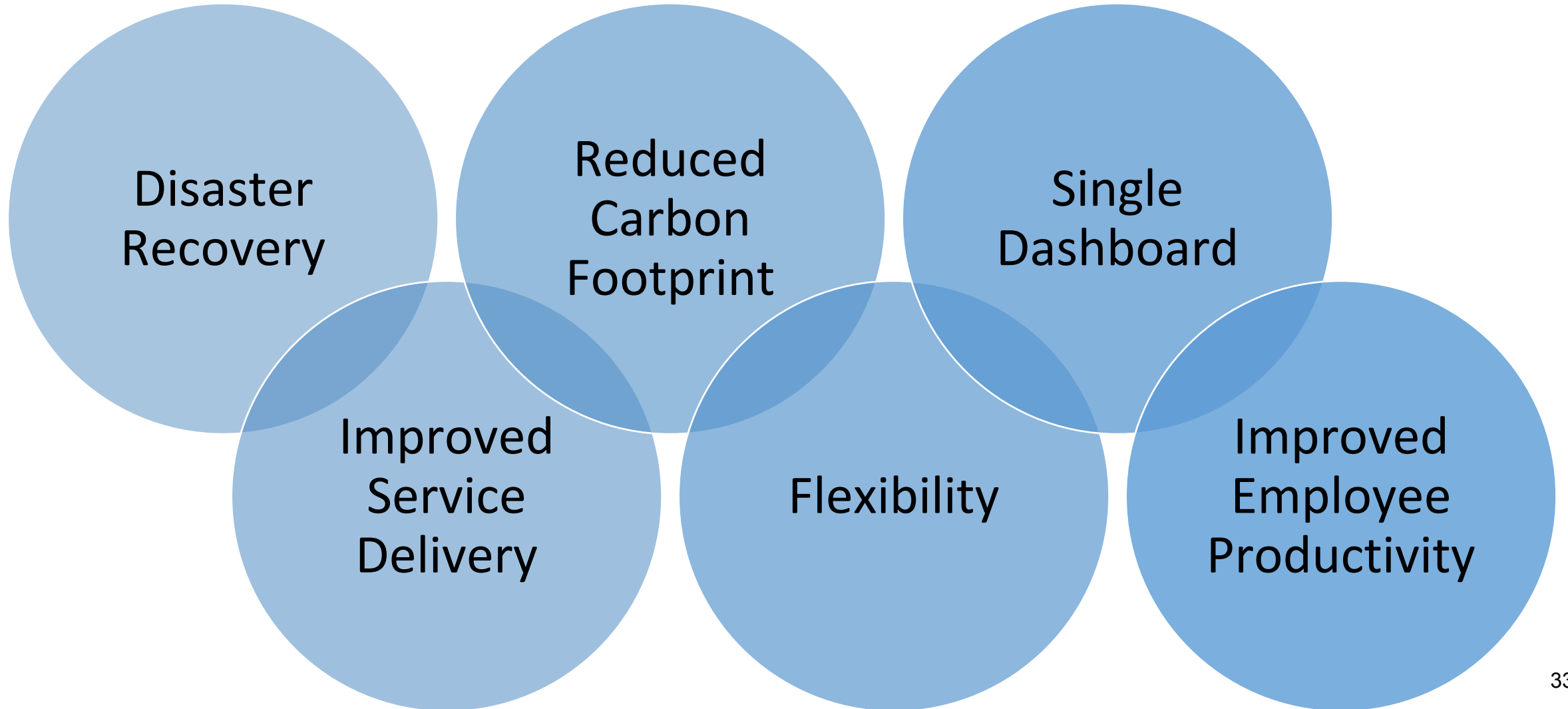
PROJECT - DATA CENTER INFRASTRUCTURE UPGRADE AND DISASTER RECOVERY IMPLEMENTATION

Q&A

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05

BUDGET
Fiscal Years 2020 – 2021

DEPARTMENT OF FIRE AND EMERGENCY SERVICES

DEPARTMENT OF FIRE AND EMERGENCY

OVERVIEW

- **Operations**
  - ➢ **Fire Suppression**
  - ➢ **Training, Safety and Emergency Medical Services**
- **Professional Standards**
- **Fire Prevention**
- **Administrative and Fiscal Services**
- **Special Operations Division**

DEPARTMENT OF FIRE AND EMERGENCY

STAFFING – Authorized FTE 152

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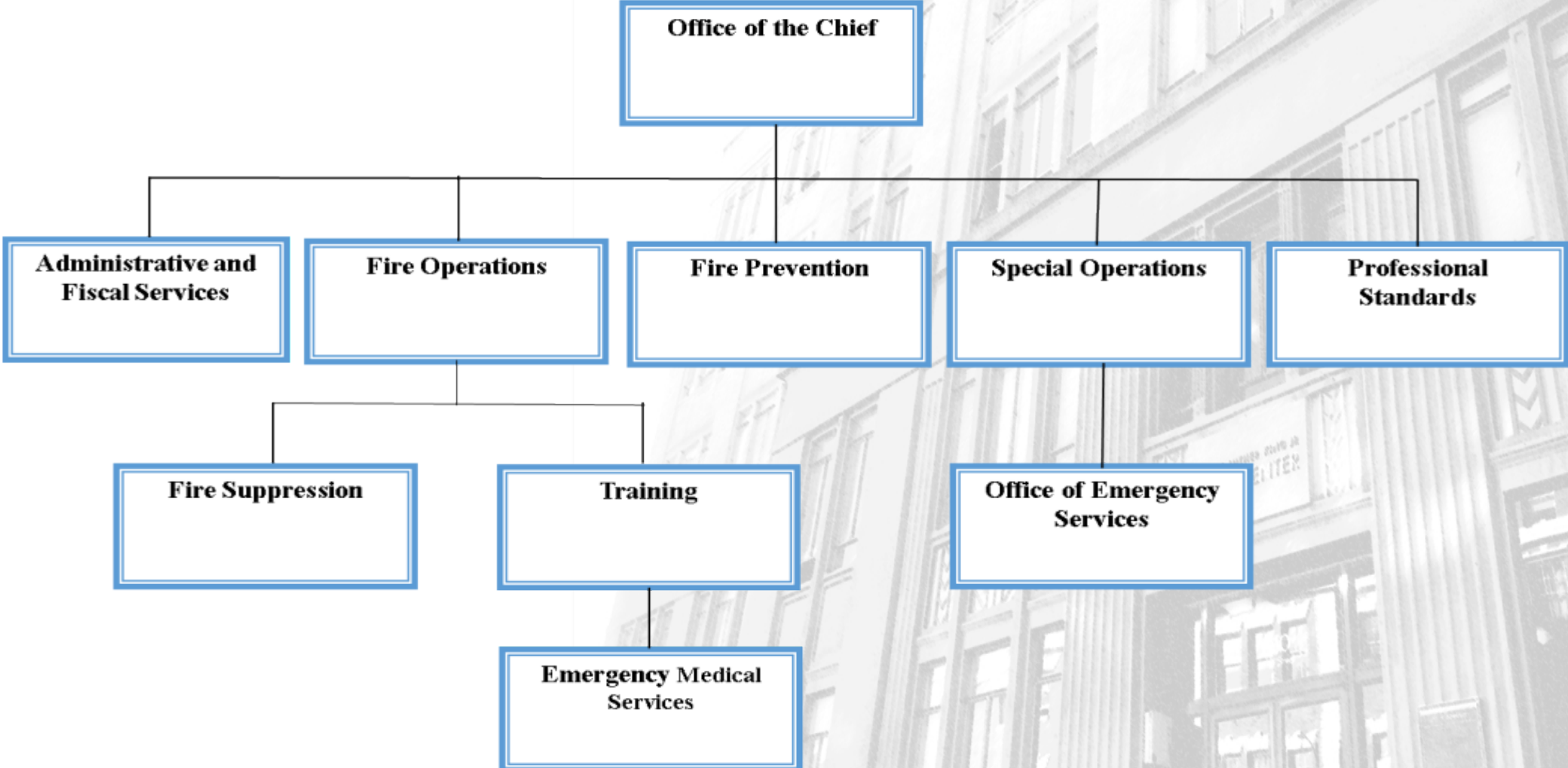
DEPARTMENT OF FIRE AND EMERGENCY SERVICES

STAFFING

	FY 2019	FY 2018	FY 2017
Authorized FTE Positions	152	148	141
Consultants and Temporary Staffing	0	0	0
Number FTE Vacant Positions	0	5	1
Vacancy Rate	0.0%	3.4%	0.7%
Number of Long Term Vacancies (> 1 Year)	0	0	0

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DEPARTMENT OF FIRE AND EMERGENCY SERVICES

KEY PROJECTS/PROGRAMS

- Fire Suppression

- Wildfire response and mutual aid

- Emergency Medical Responses

- Homeless fire and EMS responses

- Prevention, Wildland, and Construction Inspections

- Disaster Planning (City Government and Community)

- Disaster Training and Exercise (City Government and Community)

- Emergency Operations Center Coordination

- Fire Department Training and Exercises

- Hazardous Materials Response

- Water Rescue Response

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OUTCOMES/RESULTS

2017

Fires: 283

EMS Calls: 10,406

Other Calls: 5,255

2018

Fires: 263

EMS Calls: 9,972

Other Calls: 5,094

DEPARTMENT OF FIRE AND EMERGENCY SERVICES
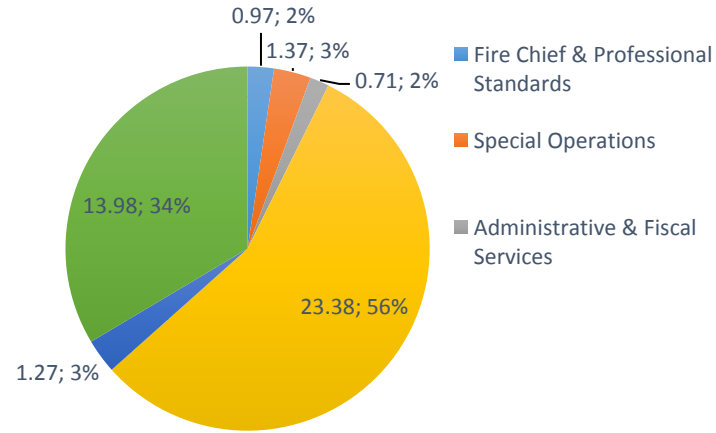
ACCOMPLISHMENTS

- Office of Professional Standards
- Disaster planning and training
- Emergency Operations Center activations
- 2018 Shake Out Bay Area media event
- New defibrillators (AEDs) in City buildings
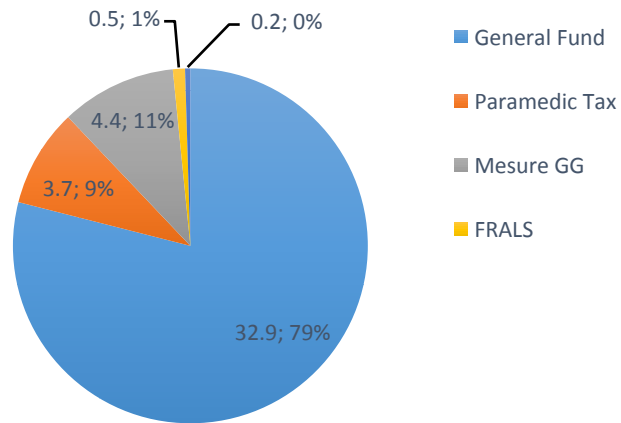- Firefighter academies 107 and 108
- Ignite Academy

DEPARTMENT OF FIRE AND EMERGENCY SERVICES
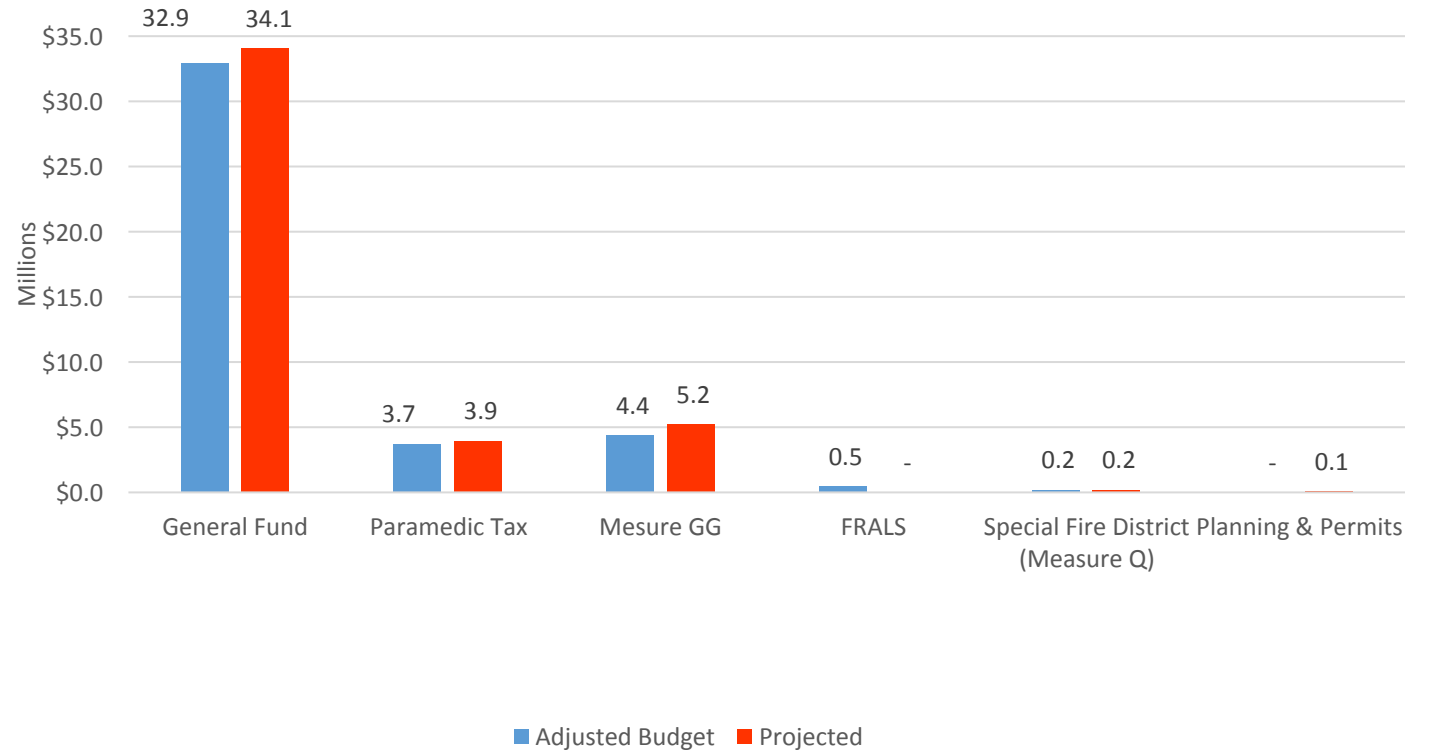
FY2019 EXPENDITURES (Millions)

Adjusted Budget by Division

0.97; 2%
1.37; 3%
0.71; 2%
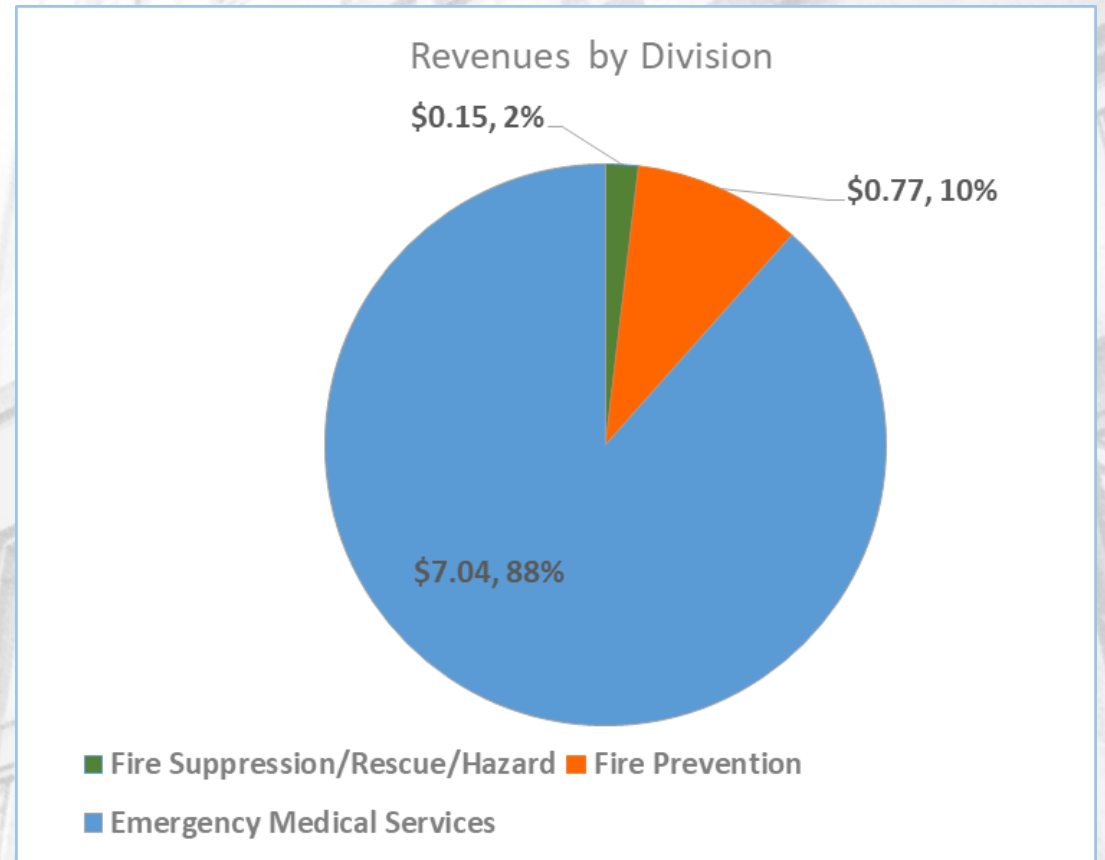
- Fire Chief & Professional Standards
- Special Operations
- Administrative & Fiscal Services

13.98; 34%
1.27; 3%
23.38; 56%

Adjusted Budget by Fund

0.5; 1%
0.2; 0%

- General Fund
- Paramedic Tax
- Mesure GG
- FRALS

4.4; 11%
3.7; 9%
32.9; 79%

FY 2019 Adjusted Budget vs Projected

Millions

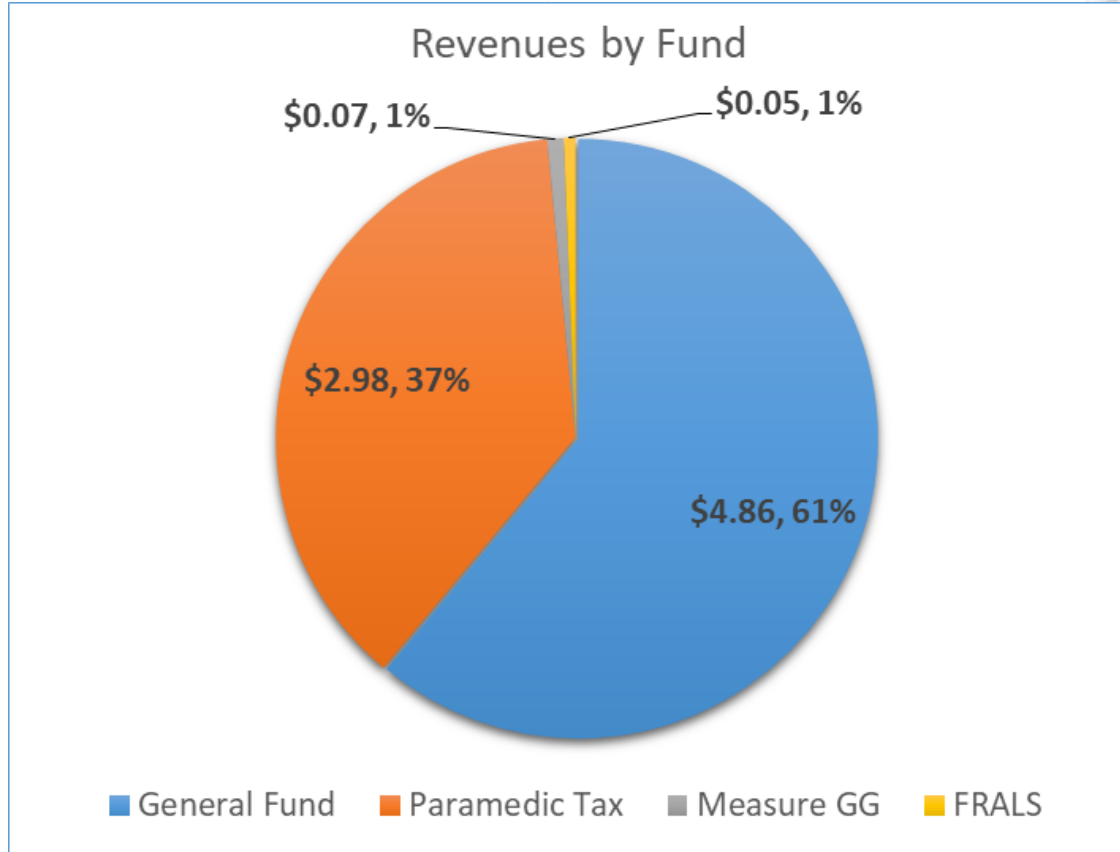|	General Fund	Paramedic Tax	Mesure GG	FRALS	Special Fire District Planning & Permits (Measure Q)
Adjusted Budget	32.9	3.7	4.4	0.5	0.2	-
Projected	34.1	3.9	5.2	-	0.2	0.1

■ Adjusted Budget ■ Projected

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DEPARTMENT OF FIRE AND EMERGENCY SERVICES

FY2019 PROJECTED REVENUES ($7.96Millions)
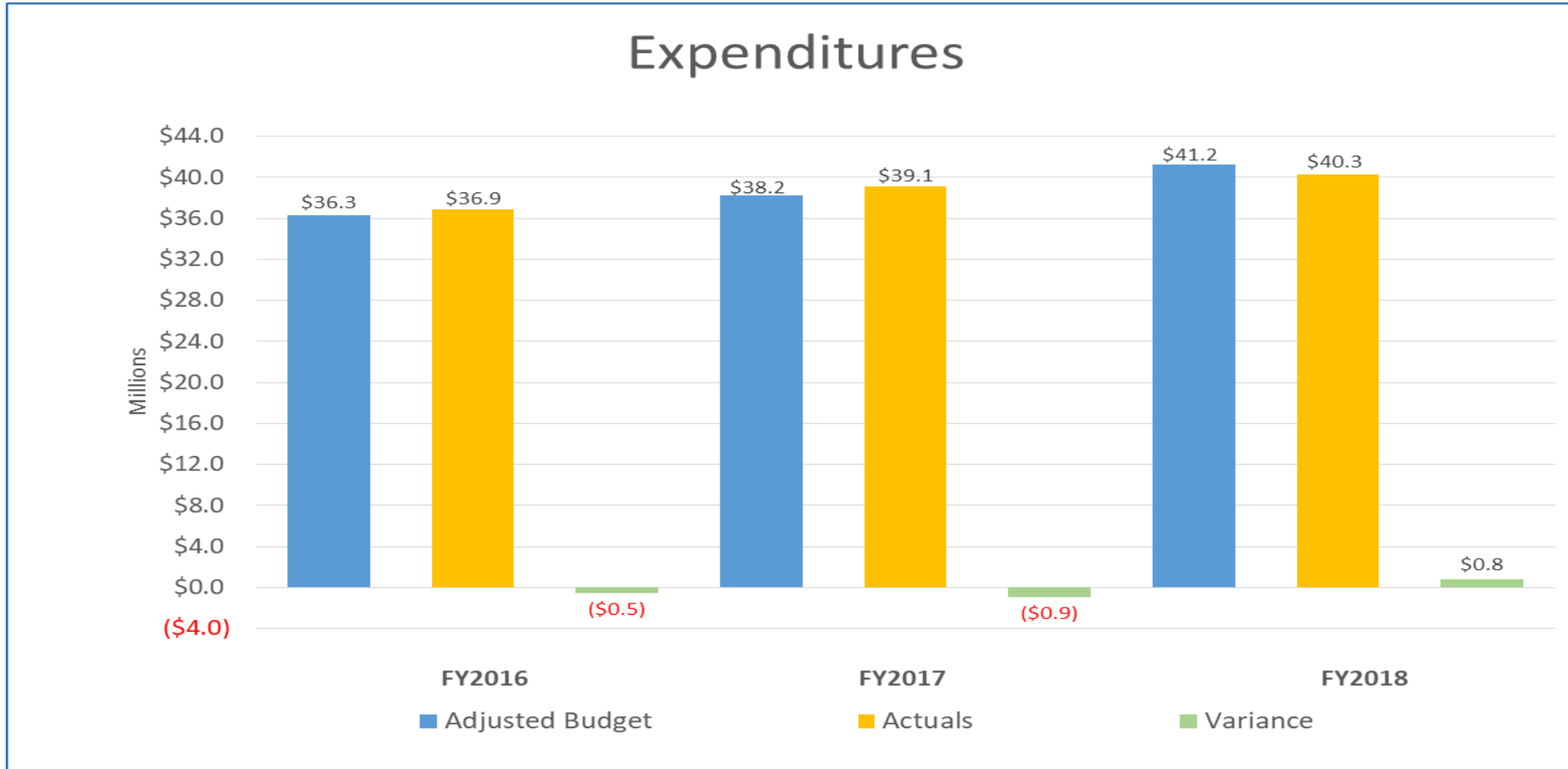
Revenues by Fund
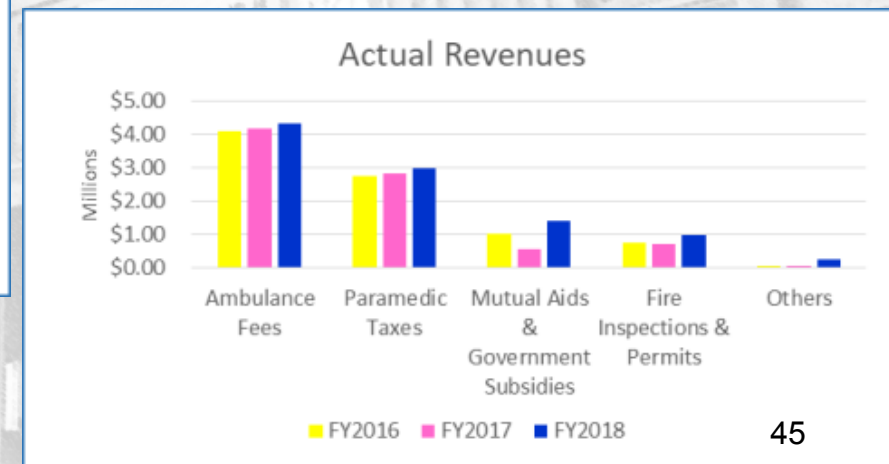
$0.07, 1%
$0.05, 1%
$2.98, 37%
$4.86, 61%

■ General Fund ■ Paramedic Tax ■ Measure GG ■ FRALS

Revenues by Division

$0.15, 2%
$0.77, 10%
$7.04, 88%

■ Fire Suppression/Rescue/Hazard ■ Fire Prevention
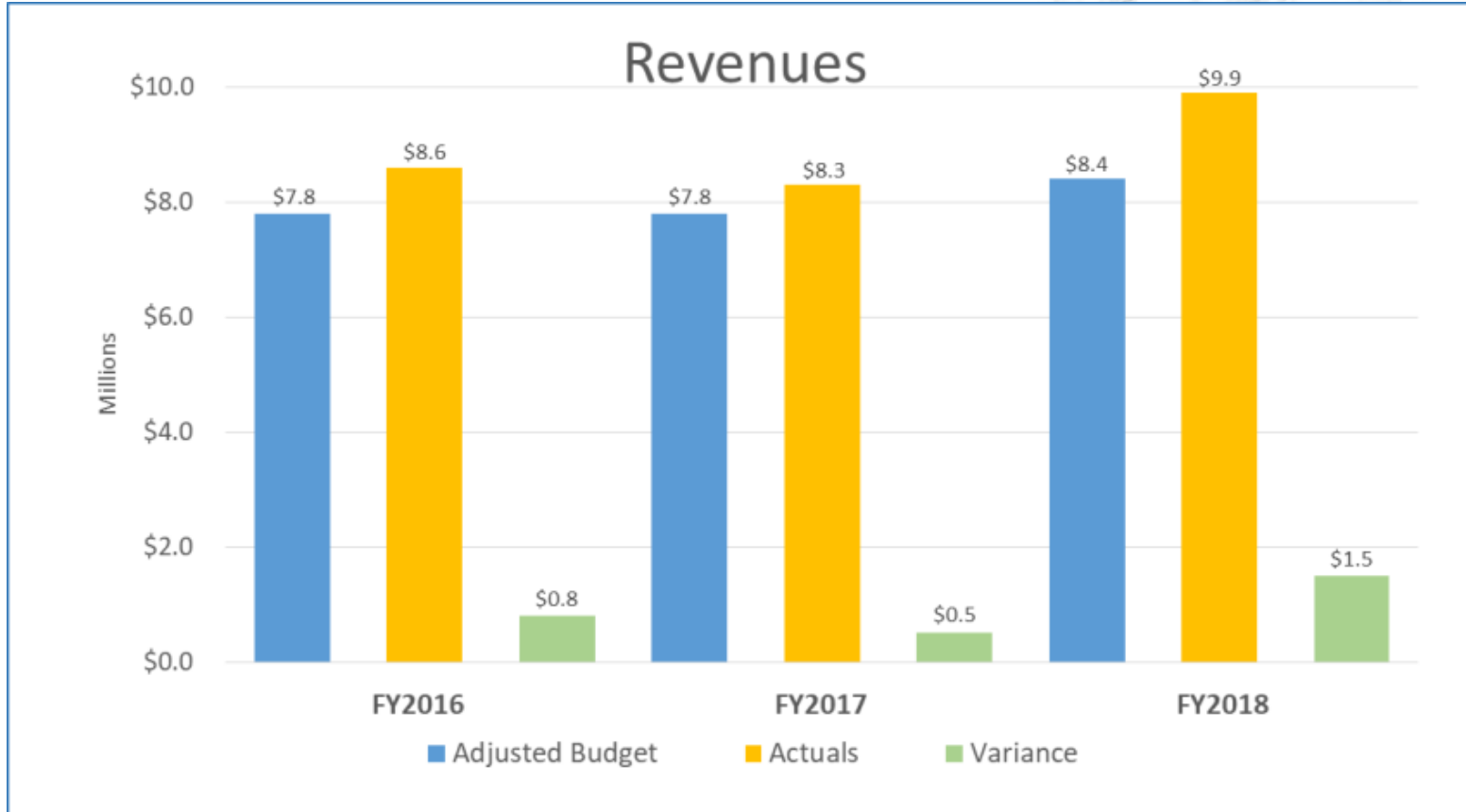■ Emergency Medical Services

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DEPARTMENT OF FIRE AND EMERGENCY SERVICES

BUDGET VS ACTUALS

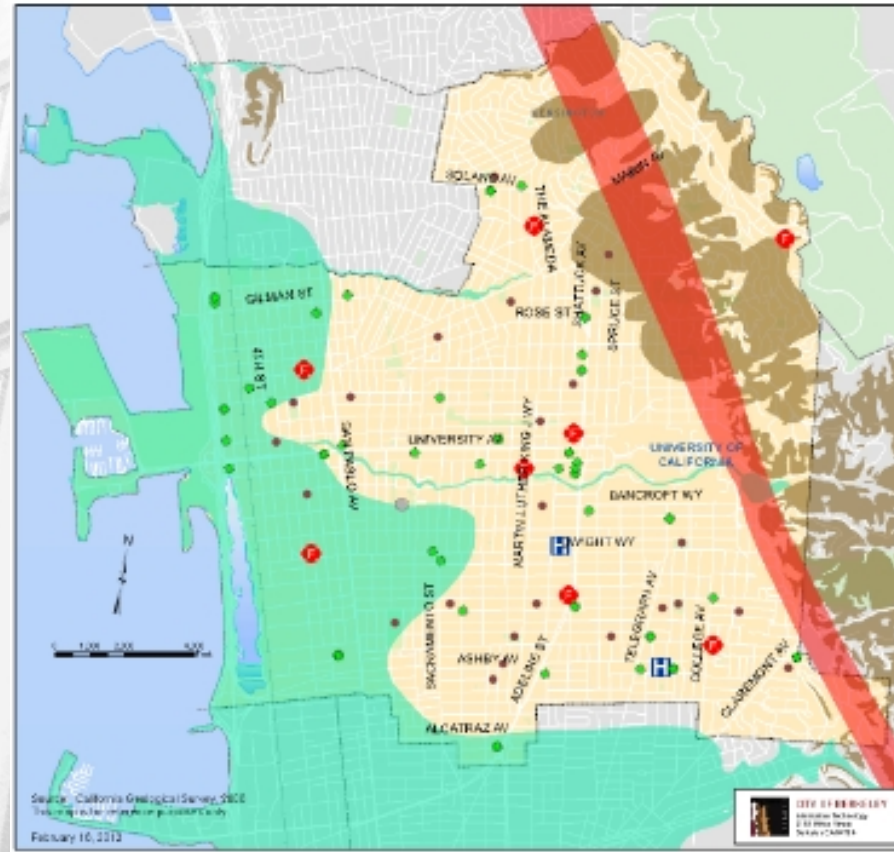# DEPARTMENT OF FIRE AND EMERGENCY SERVICES

BUDGET VS ACTUALS

DEPARTMENT OF FIRE AND EMERGENCY SERVICES

TECHNOLOGICAL NEEDS

- Fire Prevention Software
- Staffing software upgrade
- Emergency Operations Center operating systems and improvements
- EMS Software
- Fire station alerting system
- GIS integration
- Data analysis software

DEPARTMENT OF FIRE AND EMERGENCY SERVICES

NEW MANDATES

- Mental Health 5150 Transport
- First Responder Advanced Life Support (FRALS) funding
- Marina ferry expansion response capability
- SB 1205 requires annual reporting on mandated fire prevention inspections.
- Responding to the City of Berkeley Audit of Fire Prevention

DEPARTMENT OF FIRE AND EMERGENCY SERVICES

STRATEGIC PLAN

Priorities

- Carryover: 1
- New: 30

Highlights

- Mental Health 5150 Transports
- Equipment and Training for Tactical EMS
- Evacuation Training and Exercise
- Safe Passages Program
- EMS Redesign

DEPARTMENT OF FIRE AND EMERGENCY SDRVICES

CITY MANAGER FUNDING RECOMMENDATIONS

- Recommended Funding
  - Mental health patient transport contract
  - Protective equipment for tactical medical responses
  - Above Ground Water System Equipment and Logistics Captain (Measure Q)
  - Evacuation training, education, and City Staff training and exercise (Measure GG)

- Funding Deferred
  - Safe Passages
  - EMS Division Re-design
  - Hazardous Materials Response Team Training
  - Pulsepoint Software

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DEPARTMENT OF FIRE AND EMERGENCY SERVICES

NEXT STEPS/ACTION

- Assess and respond to Fire Prevention Audit findings
- Implement mental health transport provider
- Continue grant applications to fund Safe Passages program
- Identify funding and operational improvements for EMS redesign
- Seek locations and funding for improved Fire training facilities