

MENDOCINO COUNTY



# INFORMATION TECHNOLOGY MASTER PLANNING

NOVEMBER 2017

Presented by

Tom Jakobsen  
and  
Steve Robichaud

**CLIENTFIRST**  
TECHNOLOGY CONSULTING

# Tom Jakobsen, Senior Partner

IT Support and Infrastructure Practice Leader



Mr. Jakobsen has over 30 years of IT Management and Infrastructure Consulting experience in the information technology arena. He also serves dual roles as IT Director and Consultant for multiple agencies.

## Similar Clients/Projects



## Specialties include:

- IT Operations Management
- Contract and Interim CIO/IT Management
- Network Design, Procurement, Implementation, and Oversight
- IT Security
- Disaster Recovery
- Project Management
- Assessments, Strategy, and Planning

# Steve Robichaud, Partner

Applications and Process Consulting Practice Leader



Mr. Robichaud has over 25 years of Software Applications and Business Process Improvement experience, with additional experience as President and General Manager of a national justice software company.

## Similar Clients/Projects

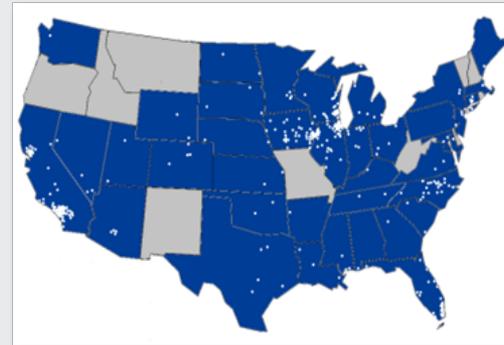


## Specialties Include:

- Executive Management Technology Advisement
- Information Technology Master Planning
- Business Process Review & Improvement
- Existing System Needs Analysis & Improvement
- Application Requirements Definition
- Software System Selection Assistance
- Project Management & Oversight
- Conversion Assistance & Planning
- Contract Reviews and Negotiations
- Disaster Recovery Planning

# LOCAL GOVERNMENT FOCUS

- National in Scope – With Local Presence
  - We are local government-focused with clients throughout the United States and in California
    - Counties
    - Municipalities
    - Special Districts
    - School Districts
    - Utilities



**Corona, CA**



**Minneapolis, MN**



**Schaumburg, IL**



**Charlotte, NC**

# CALIFORNIA CLIENTS



# WHY CHOOSE *CLIENTFIRST*?

*“IT Strategic Master Planning is the process of strategizing and architecting enterprise initiatives to support the needs of the organization”*

- Our IT Master Planning provides greater value
  - More than strategic analysis
  - Tactical (actionable)
  - Blended technical and business perspective
  - Collaborative and more comprehensive
    - Educational and Prioritization Workshops
  - Practical and sustainable
    - Implementation and budget realities
  - Use of Best Practices
    - PMI, ITIL, COBIT



# PROJECT TEAM

## Key Personnel

Project Role: **Project Director**  
ClientFirst Title: Managing Partner, Management Consulting Practice Leader

David Krout

Project Role: **Project Manager**  
ClientFirst Title: Senior Partner, IT Infrastructure and Support Practice Leader

Tom Jakobsen

Project Role: **Senior Consultant**  
ClientFirst Title: Partner, Applications Consulting Practice Leader

Steve Robichaud

Project Role: **Senior Consultant**  
ClientFirst Title: Network Engineer

Craig Williams

Project Role: **Senior Consultant**  
ClientFirst Title: Management Consultant

Alexis Mercado

Project Role: **Senior Consultant**  
ClientFirst Title: Practice Leader, Enterprise Communications Consulting

Tom Weiman

Project Role: **Network Engineer**  
ClientFirst Title: Network Engineer

Adam Korman

## MORE

- IT Plans
- Experience and Expertise
- Diversified Subject-Matter Experts



# MORE

- Detail
- Best Practices
- Initiatives/Projects
- User feedback of tangible issues
- Education and Knowledge Transfer
- Actionable

## IT INITIATIVE SUMMARIES

**IT INITIATIVE**  
 A project or program of work that is designed to improve the organization's performance. It is a strategic initiative that is aligned with the organization's mission and vision. It is a long-term project that is designed to create a sustainable competitive advantage for the organization.

**Project Details**  
 The project details include the project name, the project manager, the project start and end dates, the project budget, and the project status.

**Project Objectives**  
 The project objectives are the specific goals that the project is designed to achieve. They are measurable, achievable, and time-bound.

**Project Risks**  
 The project risks are the potential problems that could prevent the project from achieving its objectives. They are identified and managed throughout the project lifecycle.

**Project Benefits**  
 The project benefits are the positive outcomes that the project is designed to create. They are realized through the successful completion of the project.

**Project Status**  
 The project status is the current state of the project. It is updated regularly to reflect any changes in the project's progress.

**Project History**  
 The project history is a record of the project's activities and decisions. It is used to track the project's progress and to identify any lessons learned.

**Project Contacts**  
 The project contacts are the individuals who are involved in the project. They include the project manager, the project team members, and the project stakeholders.

**Project Documents**  
 The project documents are the files and folders that are used to manage the project. They include the project charter, the project plan, and the project reports.

**Project Tools**  
 The project tools are the software and hardware that are used to support the project. They include project management software, communication tools, and hardware resources.

**Project Metrics**  
 The project metrics are the key performance indicators that are used to measure the project's performance. They include project cost, project quality, and project risk.

**Project Summary**  
 The project summary is a brief overview of the project. It includes the project name, the project manager, the project start and end dates, the project budget, and the project status.

Project	Phase	Start Date	End Date	Status	Budget	Actual	2011	2012	2013	2014	2015
1. IT Infrastructure	Phase 1	1/1/2011	12/31/2011	Completed	\$1,000,000	\$1,000,000					
2. Network Upgrade	Phase 2	1/1/2012	12/31/2012	In Progress	\$500,000	\$400,000					
3. Security Enhancement	Phase 3	1/1/2013	12/31/2013	Planned	\$300,000						
4. Cloud Migration	Phase 4	1/1/2014	12/31/2014	Planned	\$200,000						
5. Data Backup System	Phase 5	1/1/2015	12/31/2015	Planned	\$100,000						

## IT Budget Rates

The following table shows Budget's IT Spending versus Recommended Best Practices and a Budget Benchmark of 23.9%. These figures represent a savings and are from Budget, California, and 23 Agencies.

Category	Budget	Best Practices	Benchmark
IT Spending	27%	23%	23.9%

In this comparison, the City's IT spending is 3% above the recommended best practices rate. This is due to the City's higher spending on hardware and software licenses.



Equipment Replacement  
 The following table shows Budget's IT Spending versus Recommended Best Practices and a Budget Benchmark of 23.9%.

Category	Budget	Best Practices	Benchmark
Equipment Replacement	3.5%	2.5%	2.5%

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# PHASED APPROACH



Issues and needs determined first...with strategies and goals to get there...culminating in tactical/actionable initiatives...working with the Task Force throughout

# KEY FOCUS AREAS

- Departmental Business Operations/Needs
  - Departmental Questionnaires
  - Follow-Up Needs Assessment Workshop/Interviews
    - Complete Application Assessment
- IT Infrastructure & Operations/Needs
  - Interviews – Leadership to Help Desk
  - Review/Assessment of IT Staff and Resource Requirements
  - And much more...

**Two  
Focus  
Areas**



# PLAN COMPONENTS

- Needs Assessment
  - Identifies current-state strengths and weaknesses
  - Outlines gaps in best practices, application systems, security, infrastructure, organizational structure, and skill sets
  - Provides an initial snapshot of initiatives to be included in the plan, including:
    - Best Practices
    - Applications and Departmental Systems
    - Information Technology – Infrastructure, Communications, Operations, IT Staffing, and Security
    - Emerging Technology, Smart County, Gov 2.0 and online services

# PLAN COMPONENTS

- Summary Report
  - Project Objective, with Methodology and Approach
  - Goals and Strategies
  - Statistics, Metrics, and Benchmarks, versus similar organizations
  - Key Issues, Initiatives, and Next Steps
- Resource Requirements Analysis
  - Identifies departmental, IT, and third-party resource requirements for **successful** implementation of the plan
  - Recommended organizational structure and governance model
- Budgets and Timelines
  - Budget for each initiative on five-year timeline with priorities
  - Timelines for major initiatives within the Plan

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OPTIMAL TECHNOLOGY GUIDANCE

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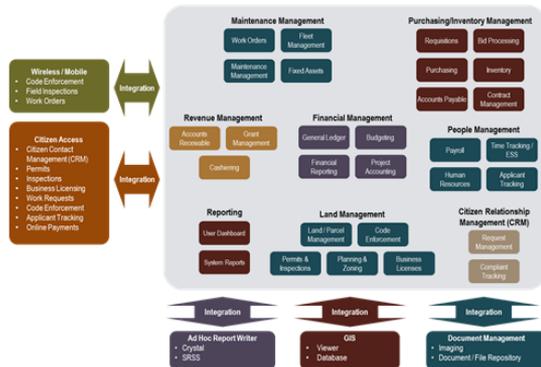
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# DEPARTMENTAL INITIATIVE - SAMPLE

## 17. Enterprise Resource Planning (ERP) Replacement

Enterprise Resource Planning (ERP) is an organization-wide software solution that allows integration among various departments and their respective functions. The result is a centralized system of communication, data storage, and operations management. Replacement or improvements to ERP solutions bring about processes from which multiple departments can benefit. Common municipal-related ERP applications modules include accounting, financial reporting, payroll, human resources, planning and permitting, and work orders. The following graphic shows a typical municipal ERP environment.

Example Enterprise Applications Overview



Note: The Land Management function represented in the above diagram (excluding Business Licenses) is included in a separate initiative due to the City's existing TRAKIT implementation.

## Findings and Observations

Currently, the City primarily utilizes the Superior Pentamation system for its ERP needs with the exception of TRAKIT for Land Management, HPL for Business Licensing, and iWorQs for Work Orders. Pentamation is built on technology that was used several generations back in the system development timeline. It is therefore outdated and lacking in adequate integration, reasonable reporting capabilities, and commonly utilized functionality found in other municipal based ERP systems. The Pentamation system requires excessive manual workarounds and reconciliations. Pentamation is also not meeting the City's expectations and carries significant annual costs for the resulting return realized by the City. Nearly, all departments noted



The City is missing opportunities for labor savings (thousands of labor hours per year), improved customer service due to lack of integrated solutions with sufficient training, and functionality to meet internal operational and citizen/public needs.

All departments expressed a strong interest in newly available features and enhancements that a more modern ERP solution can provide. Departments described unmet reporting needs, feature/functionality requirement deficiencies, and an overall desire for the system to be replaced. Gaining greater utilization in enterprise applications software modules through installation of a new ERP system is key to significant increases in citywide productivity and efficiencies.

The following is a table that shows the City's major suites that are usually included in an ERP system. The table also depicts what prominent municipal ERP systems typically offer.

Industry-Typical Enterprise Module Name	Current Available Vendor Equivalent Module	Licensed	Implemented	Potential Process Improvements
<b>Financial Management</b>				
<b>Superior Pentamation</b>				
General Ledger	Fund Accounting	Y	Y	Y
Accounts Payable	Fund Accounting	Y	Y	Y
Requisitions	Fund Accounting	Y	Y	Y
Purchase Orders	Fund Accounting	Y	Y	Y
Budgeting	Fund Accounting	Y	Y	Y

## Recommendations

- Replacing the current outdated, Pentamation, iWorQ, and Verizon Fleet applications environment with a modern, fully integrated ERP solution.
- Ensure that the City has identified all its applications needs, and that appropriate funding has been budgeted for a replacement ERP by conducting a comprehensive needs assessment and developing a Request for Proposal (RFP).
- The needs assessment process should provide an inventory of current and future functionality requirements by application and department. The process can also be used to inventory all reporting requirements, as well as integration/interface requirements between other applications, such as CRM, ECMS, website, GIS, etc.
- The needs assessment should also include a business process review for each module, including reviewing manual processes and shadow systems, such as spreadsheets, to determine automation improvements that will result in labor efficiencies.
- Through the RFP process, potential ERP software vendors will be asked to respond with their capabilities and compliance with City-specific requirements.
- Select new ERP software vendor according to the *Software Selection Best Practices* initiative.
- Follow implementation project management best practices according to the *Project Planning and Implementation Best Practices* initiative.

Note: City IT staff members have not conducted this type of project with these specific business process analysis, documentation, and negotiation requirements. It is highly recommended that the City consider obtaining consulting services from a municipal ERP Applications subject-matter expert to perform the business process reviews, needs assessment, RFP development process, and contract negotiations process.

## ERP Background and Supplemental Information

This supplemental background section includes findings and observations for the following:

- CIS Utility Billing (replacement of Pentamation)
- Contract Management (new)
- Bid and Proposal Tracking System (new)

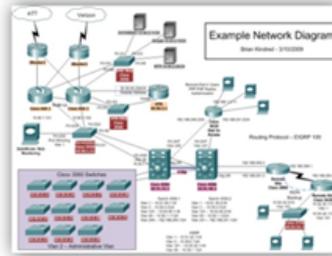
- Initiatives described in business terms.
- Findings and observations from an objective perspective.

# IT INITIATIVE - SAMPLE

## 82. Network Redesign

### Findings and Observations

- Current network topology contains single points of failure for core connectivity.
- Bottlenecks exist in the network, resulting in poor performance and reliability.
- Not all devices within the core network were designed with core network functionality in mind.
- Network was not built with future growth in mind, and is limited.
- Network IP addressing and segmentation improvements could further increase security and performance.
- The Police Department is segmented from the City administrative network.
- The SCADA network is segmented from the City administrative network.



### Recommendations

- Redesign the core network to increase speeds a minimum of ten times.
  - Create a resilient core network that eliminates single points of failure.
- Review Virtual LAN (VLAN) network segmentation and revise per current best practices.
- Monitor and collect performance metrics on network availability and viability.
- Consider implementing firewalls between the City administrative network, and the Police and SCADA networks.

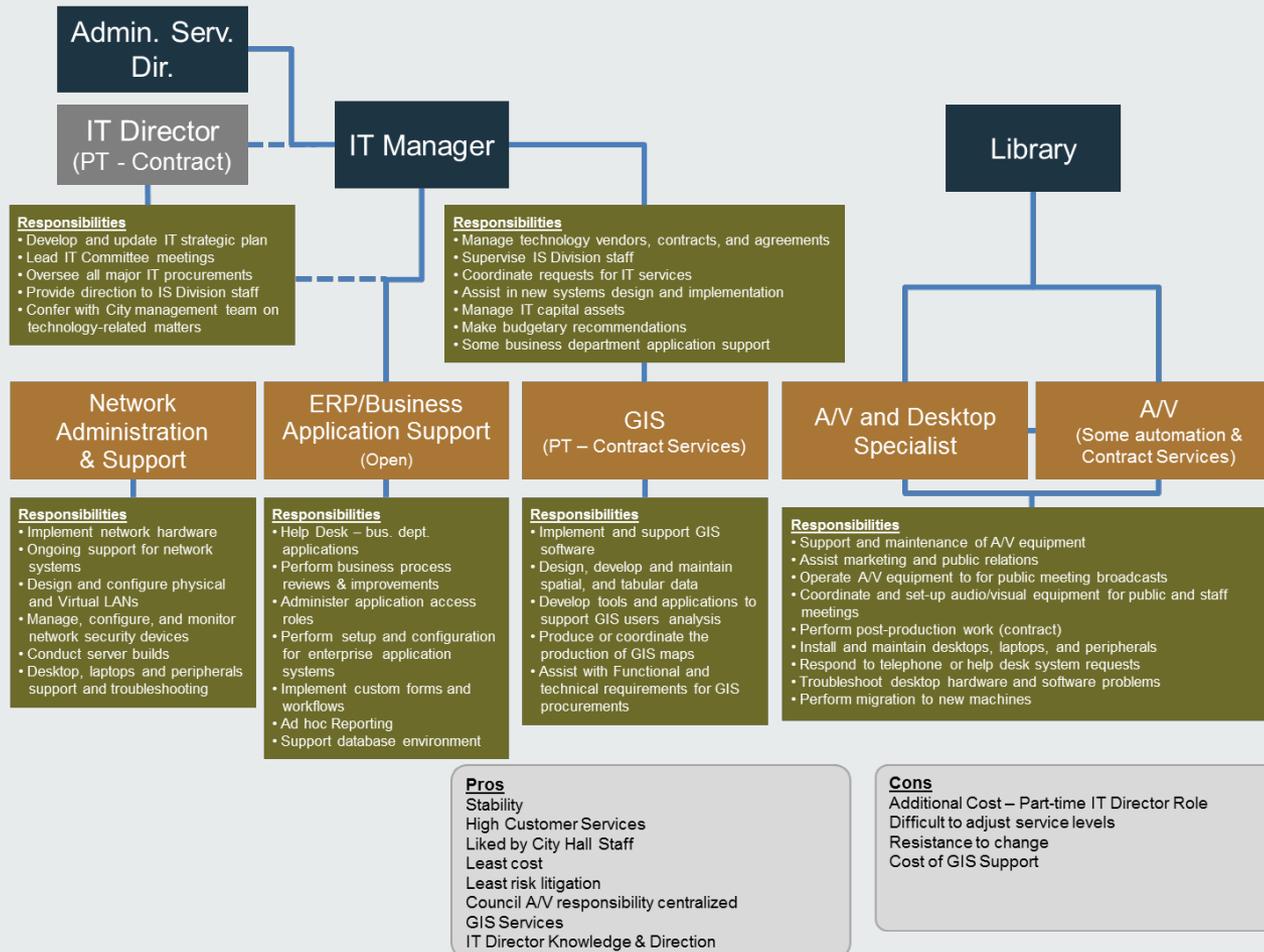
### Benefits

- Improved network performance speed and reliability
- Reduced support costs
- Improved network availability at remote sites

- Initiative Descriptions
- Findings and Observations
- Staff Feedback
- ROI Considerations
- Recommendations
- Benefits

# IT STAFFING ANALYSIS

- Sample IT Staffing Org Structure

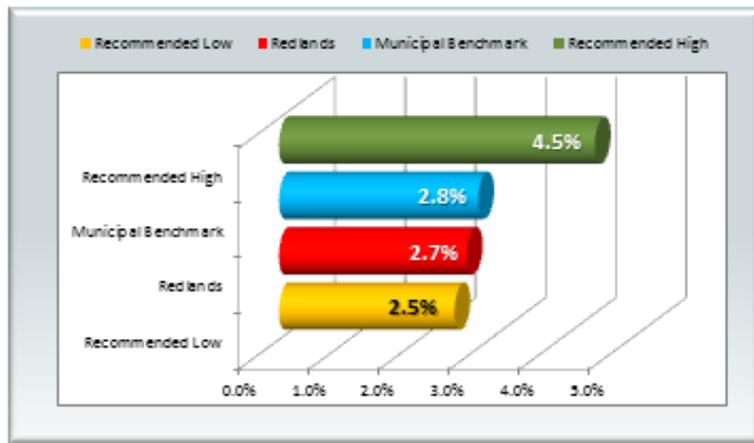


# METRICS AND BENCHMARKING

## IT Spending versus Revenue Fund Budgets

The following table depicts Redlands's IT Spending versus Recommended Best Practices and a Municipal benchmark of 29 agencies. These agencies responded to a survey and are from Illinois, California, and Wisconsin.

Redlands	Recommended Low	Municipal Benchmark	Recommended High
2.7%	2.5%	2.8%	4.5%



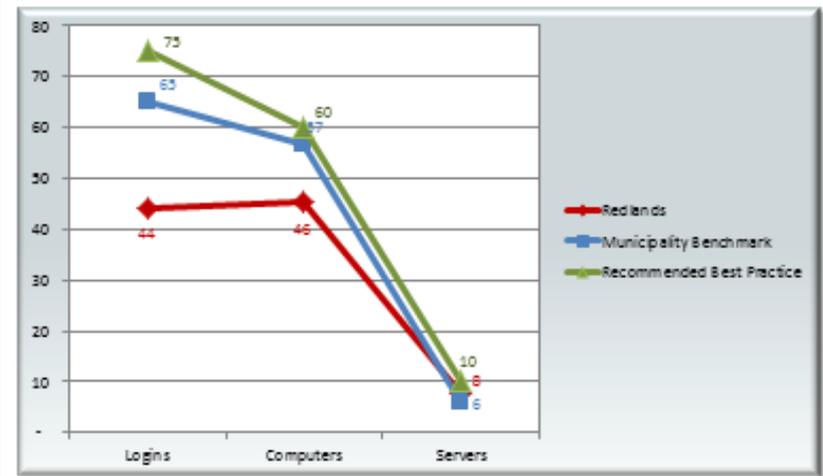
The 2012/2013 adopted budget, general and enterprise revenue funds were \$99,429,217 and the IT expenditure budgets total of \$2,666,462. The municipal spending benchmark range was between 1% and 8%. The percentage of IT expenditures versus revenue fund budgets at Redlands is near the recommended low. We understand that additional funding may not be forthcoming; therefore, it will be imperative to develop a sustainability plan that provides realistic resource allocation. Greater funding should result in increased productivity at the department level.

## IT Staffing Ratios

The following table depicts Redlands's IT Staffing Ratios versus a Municipality Benchmark of 37 similar agencies. These agencies responded to a survey.

	Redlands	Municipality Benchmark	Recommended Best Practice
Logins	44	68	75
Computers	46	58	60
Servers	8	6	10

In this comparison, the City's staffing ratios for users, computers and servers are less efficient than their peers (i.e., supporting less users and devices per IT staff) and recommended best practices. As a part of our review, we did uncover many areas in which the City could expect to have significant productivity improvements for these benchmarks.



# STRATEGIES, GOALS & OBJECTIVES

## IT STRATEGIES, GOALS & OBJECTIVES

The strategies for leveraging information systems to deliver City services are listed below. Within each strategy, we have listed initial goals and objectives for the City. We have translated those goals and objectives into specific initiatives in the *Appendix* of the report. Additionally outlined later in the report, are the budgetary costs for each initiative, resource requirements, implementation timeframe, and, if appropriate, the next steps toward implementation.

### MODERNIZE IT INFRASTRUCTURE

#### Goals and Objectives

- Create a City-wide computer room
- Move from obsolete hardware and software to current generation infrastructure
  - Eliminate productivity wasters including incompatible software and disk space limits
- Improve resiliency and uptime of infrastructure
  - Create and track uptime metrics

### DEVELOP SUSTAINABILITY PLAN

#### Goals and Objectives

- Develop an application portfolio and understand the life cycle cost of each application
- Plan for the sustainability of applications in addition to existing hardware capital replacement funding
- Create a IT Capital Replacement Plan to forecast and fund hardware and software replacement costs

### IMPROVE IT CUSTOMER SERVICE

#### Goals and Objectives

- Foster a customer service attitude for all aspects of IT service delivery
- Create an IT Help Desk
- Document service levels for incident response and enhancements
- Develop customer service performance metrics and exceed those expectations
- Develop Mobile Device Management capabilities
- Consider "Bring Your Own Device" and "Network Access Control" for some users

### IMPROVE STAFF PRODUCTIVITY

#### Goals and Objectives

- Increase utilization of software application features
  - Increase user application training
- Introduce application management best practices
  - Improve departmental ownership of applications
  - Identify key roles and responsibilities for core business applications
- Conduct process reviews and document application feature/function requirements to identify automation and opportunities to streamline processes
- Utilizing Return on Investment (ROI) principals, justify additional applications to improve productivity and service
- When justified, move to second generation mobile computing (tablets vs. laptops)

### ENABLE CITY WIDE APPLICATION USAGE

#### Goals and Objectives

- Connect all City facilities through a wide area network
- Expand remote access to improve staff productivity
- Improve reliability of access, reduce downtime

### ADOPT INFORMATION TECHNOLOGY BEST PRACTICES

#### Goals and Objectives

- Develop an IT Steering Committee and Governance mechanism
- Adopt a Best Practices approach to software selection and management
- Create and maintain project inventory
- Utilize project management principles for larger projects
  - Become date- and project schedule-driven
- Finalize documentation
  - Create standard operating procedures
- Implement technology productivity tools, automate:
  - Security patch management
  - Desktop configuration and maintenance
  - Network management
  - Alert and alarm threshold management

### IMPLEMENT DISASTER RECOVERY CAPABILITIES

#### Goals and Objectives

- Develop a plan to implement disaster recovery capabilities
  - Over several years, develop the capability to recover IT applications in the event of a major incident in the San Bernardino Valley
- Consider implementation of redundant Internet connections with automatic failover

# CIP / BUDGET



## IT Master Plan Report Project / Initiative Budget Estimates

Initiative #	IT Initiative	Comments	Priority	Budget Range		Dept(s)	Funding Source(s)	Current 2016 Fiscal Year	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	Outlying Yrs (Capital Expend)
				Low	High									
<b>Best Practices</b>														
5	Applications Management Best Practices	Providing tools and staff training. Establishing roles and responsibilities for enterprise applications.	TP	\$ 7,500	\$ 15,000	All Departments			\$ 10,000					
6	Applications and User Licensing Inventory	Providing tools and staff training	H	\$ 1,000	\$ 5,000	All Departments			\$ 5,000					
7	User Training and Support	Annual Recurring	H	\$ 25,000	\$ 75,000	All Departments			\$ 25,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	
8	Training Room	Computers and equipment	M	\$ 10,000	\$ 15,000	All Departments			\$ 12,000					
9	Software Selection Best Practices	Standard methodology and practices	H	n/a	n/a	All Departments			n/a	n/a	n/a	n/a	n/a	n/a
10	Project Planning and Implementation Best Practices	Providing tools and staff training	H	\$ 1,000	\$ 5,000	All Departments			\$ 5,000					
11	Maintaining Software Updates	Standards	H	n/a	n/a	All Departments			n/a	n/a	n/a	n/a	n/a	n/a
12	IT Project and Services Portfolio	Documenting IT Department roles and responsibilities for all services including SLA for business application support	H	\$ 1,000	\$ 25,000	IT & Finance			\$ 15,000					
13	Sustainability Planning	Providing tools and staff training	H	\$ 5,000	\$ 15,000	All Departments				\$ 10,000				
14	Cloud Computing	Standards	H	n/a	n/a	IT & All Departments			n/a	n/a	n/a	n/a	n/a	n/a
15	Centralized Land and Parcel Management	Included in developing GIS Master Plan Initiative	TP	See below	See below	All Departments			see below	see below	see below	see below	see below	
<b>Applications and Departmental Systems</b>														
16	Enterprise Resource Planning (ERP) Replacement	Includes the indented initiatives below:	TP	\$1,000,000	\$2,000,000	All Departments			\$ 85,000	\$ 1,000,000	\$ 500,000	\$ 250,000		
17	Project and Grant Accounting	Included in ERP initiative	TP	Included with ERP		All Departments								
18	Contract Management	Included in ERP initiative	TP	Included with ERP		All Departments								
19	Cashiering Needs Assessment and Replacement	Included in ERP initiative	TP	Included with ERP		All Departments								
20	Work Orders/Maintenance and Asset Management System	Included in ERP initiative	TP	Included with ERP		All Departments								
21	Fleet Management	Included in ERP initiative	TP	Included with ERP		All Departments								
22	Land Management System Replacement	Included in ERP initiative	TP	Included with ERP		All Departments								
23	Electronic Plan Submittals and Reviews	Included in ERP initiative	TP	Included with ERP		All Departments								
24	Human Resources System Improvement or	Included in ERP initiative	TP	Included with ERP		All Departments								

- Using a budget *range* is wise
- Include other information
  - Priority
  - Departments Affected
  - Dependencies
  - Comments

# THE RESULT

## How will this leave the County better off?

- Assessment of Existing IT Environment (a Baseline)
- Identification of Strengths and Weaknesses
- Identification of IT Needs (Countywide)
- Expression of IT Needs as Projects/Initiatives
- Prioritization of All IT Projects/Initiatives
- Improved Security
- Increased Efficiency
- Consensus on IT Spending and Investment
- Improved Governance of IT Resources and IT Decision Making
- Alignment of IT Strategies with Countywide Strategies



It's an IT Roadmap for the County to Follow



**Questions?**

**THANK  
YOU!**