



February 24, 2016

Performance Audit

Website Accuracy & Completeness

Citywide

Report No. 15-112

The screenshot shows the City of Albuquerque website interface. At the top left is the city logo. The header navigation includes '311', 'Explore', 'Jobs', 'Get Around', 'Business', 'Community', 'Transparency', 'Departments', and 'A-Z'. A search bar and 'Translate Our Site' link are on the right. The main banner features a museum exhibit with the text 'Feature: ABQ Museum' and 'Discover the art, history, and wonder of the Albuquerque Museum.' Below the banner are two sections: 'How Do I' with dropdowns for 'Pay My Bill', 'Find City Services', and 'Submit Comments'; and 'Quick Links' with buttons for '311', 'GOV TV', 'Photos', 'A to Z', 'Minimum Wage', and 'Contact Us'.

**CITY OF ALBUQUERQUE
OFFICE OF INTERNAL AUDIT**

PERFORMANCE AUDIT REPORT
WEBSITE ACCURACY & COMPLETENESS
CITYWIDE
REPORT NO. 15-112

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Website Accuracy & Completeness

Performance Audit

2/24/2016

Audit #15-112

The purpose of this audit was to review the City of Albuquerque’s (City’s) website content for accuracy and completeness. The audit was included in the fiscal year (FY) 2015 audit plan.

Executive Summary

Providing public information is a basic function of municipal government. The City’s website has been providing an ever-expanding selection of content since 1994 to citizens and to ABQ311, the City’s 311 Call Center. The City’s website contains approximately 2,500 individual pages of information and provides access to numerous documents, reports, and open source data.

The City has strong Information Technology Policies and Standards based on best practices for website management, and also has knowledgeable and responsive in-house technical support.

The City has a decentralized model for website content management. Nearly 150 departmental subject matter experts maintain responsibility for managing content on their departments’ pages. However, this model creates challenges because serving as a website contributor is a small part of their duties. As a result, information that has changed may not be taken down or revised in a timely manner. By taking additional steps to reduce instances of inaccurate and outdated content, quality control will be improved, and the City will have greater assurance that citizens, ABQ311, and other website visitors will obtain timely and accurate information when visiting the City’s website.

The CAO and DTI agree with the recommendations and will provide reminder messaging for department directors. DTI is revising the process for deactivating website access when contributor roles change.

Findings

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Review of a sample of 594 web pages found:

- 145 nonfunctioning links, on 62 website pages,
- 76 pages containing outdated content,
- 20 pages containing inaccurate content, and
- 10 pages with exceptions to the City External Link Standard.

The Department of Technology and Innovation (DTI) does not have a formal access revocation process for former website contributors.

Recommendations

...

The CAO should:

- Periodically remind department directors of their responsibility to ensure that website content is accurate and current.
- Encourage departments to establish schedules for review of their web pages.

DTI should:

- Ensure that access to the content management system is promptly deactivated when web contributors terminate, retire, or transfer to another department.



City of Albuquerque

Office of Internal Audit

February 24, 2016

Accountability in Government Oversight Committee
P.O. Box 1293
Albuquerque, New Mexico 87103

Audit: Performance
Website Accuracy and Completeness – Citywide
Audit No. 15-112

FINAL

INTRODUCTION

The Office of Internal Audit (OIA) conducted a Citywide performance audit to determine if content on the City's website is accurate, complete, and up-to-date. The audit was included in OIA's fiscal year (FY) 2015 audit plan. The audit objectives, scope, and methodology can be found in **Appendix A**.

Providing public information is a basic function of municipal government. Providing accurate and timely information online is a cost-effective way for municipalities to provide such information. In a typical month, more than 288,000 unique visitors visit one or more pages on the City of Albuquerque's primary internet domain, www.cabq.gov. Besides providing information to internet users, the City's website is the official repository of information for all inquiries to ABQ311, the City's 311 Call Center. ABQ311 operators are instructed that the website is the official source of City information. In most cases, information is not provided by ABQ311 operators unless it has been published to the City's website.

Over the years, the City's website has grown from a few simple pages of contact information to approximately 2,500 pages on diverse topics. Visitors to the website can obtain:

- Official news releases from the Mayor's Office,
- Step-by-step instructions on how to apply for an Albuquerque business registration,
- Real-time flight information on arrivals and departures from Albuquerque International Airport,
- Detailed information about air quality,
- Guidelines of what to place in City recycling bins and what not to recycle,
- Detailed schedules and prices for the City's Golf Courses,

- Schedules, programs, and amenities at the City’s multigenerational centers,
- Information on becoming an extra in a film, and
- Information from numerous open data sets.

The City has strong Information Technology Policies and Standards pertaining to website management. Most web-related policies and standards were established between 2003 and 2006, and have contributed to a consistent presentation of City content. Policies and standards are based on best practices including Associated Press style guidelines for web publishing, Federal guidelines for enhancing access to electronic information for people with disabilities, and Web Content Accessibility Guidelines. Management of the website is enhanced by knowledgeable and responsive in-house technical support.

The City’s website has approximately 2,500 individual pages of information. Those pages, in turn, contain links to numerous documents and other official sources of information. Management of the website follows a decentralized model. The Department of Technology and Innovation (DTI) provides the infrastructure for content management, with training and ongoing technical support provided by a dedicated Web Team, while the content providers and subject matter experts reside in City departments. As of December 9, 2015, there were 146 individual website contributors. While website contributors are spread throughout City departments and divisions, one point in common is that serving as a web contributor is one of multiple duties that these individuals are required to perform on an ongoing basis.

FINDINGS

The following findings concern areas that OIA believes could be improved by the implementation of the related recommendations.

1. THE CAO SHOULD PERIODICALLY REMIND DEPARTMENT DIRECTORS OF THEIR RESPONSIBILITY TO ENSURE THAT WEBSITE CONTENT IS ACCURATE AND COMPLETE.

The review considered conformance with City policies and standards related to page construction and content. For several attributes, no exceptions were identified in the web pages tested. For example:

- There were no instances of paid advertising, which is prohibited on the City’s website.
- Use of Portable Document Standard (PDF) files was within acceptable guidelines. PDFs were not used to replace plain text content, improving access for persons with disabilities.
- Where PDF files were posted, files were flagged with the required disclaimer.

- Pages adhered to website credit guidelines, and did not credit individual employees for design or development.
- All pages reviewed contained sufficient contact information.

The following exceptions were noted based on a review of 594 web pages on www.cabq.gov on December 23, 2015:

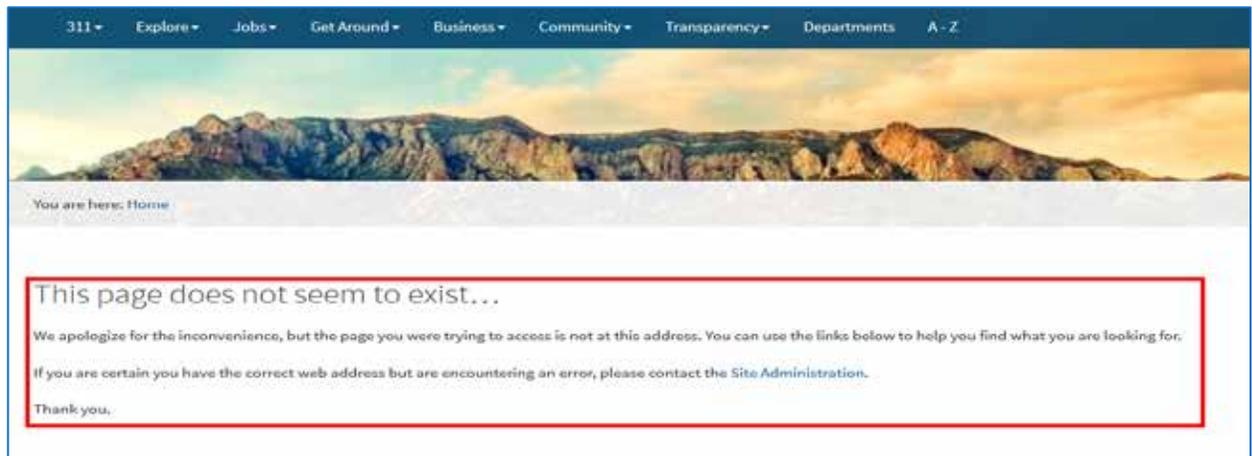
- 145 bad/nonfunctioning links, on 62 individual web pages,
- 76 pages containing outdated content,
- 20 pages containing inaccurate content, and
- 10 pages with exceptions to the City’s External Link Standard.

Instances of outdated and inaccurate content and non-functioning links were noted on the City’s website. As a result, the public may be misinformed about City services or events and place reliance on incorrect or outdated information. If a citizen calls ABQ311 for this same information, the inaccurate information may be relayed by the ABQ311 operator because ABQ311 uses the City’s website as its principal source of information.

Bad/Nonfunctioning Links

Multiple bad/nonfunctioning links were identified on 62 individual website pages. Some bad external links resulted in messages from the external server stating “error 404, page not found.” In other cases, external links resulted in a “Gateway Timeout” message.

Broken internal links to other pages on CABQ.GOV resulted in a message stating “This page does not seem to exist...” For example, the graphic below illustrates the message generated when attempting to access an internal bad link.



Internal broken links included, but were not limited to:

- Complaint forms: Residential Code Enforcement,
- Complaint forms: Weed/Litter,
- Complaint forms: Zoning Code Enforcement,
- Historic Landmarks,
- Impact Fees,
- Litter & Weed Complaint,
- Mayor's Office of Volunteerism and Engagement (MOVE),
- Report forms: Residential Code Enforcement,
- Sex Offenders, and
- Theaters: Kimo Theater.

Outdated Content

Seventy-six pages contained outdated items, which varied from “recent event” items to “announcements” that were significantly outdated. For example, there were two announcements of pool closures, one from January, 2015 and another from Fall, 2015. Another page detailed an Active SWAT Situation from September, 2015.

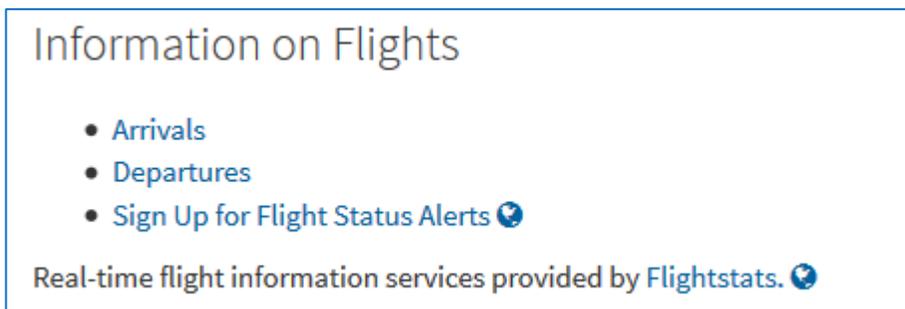
Inaccurate Content

There were 20 pages containing inaccurate information. Examples include:

- Contact information included former City employees,
- A link for permits and forms pointed to frequently asked questions (FAQs),
- A map link to a City community center provided directions to a different City community center, and
- Several map pages were not functioning properly, and did not readily provide directions to City facilities.

Exceptions to External Link Standard

The City’s External Link Standard requires that links to non-City websites be identified with an image of a globe. The purpose of the globe indicator is to alert users that the link will take them to an external website and that the City has no control over the content. For example, the Airport’s pages include flight information. On the page excerpt below, two of the links go to external websites and are indicated with the globe image.



Ten pages were identified that contained exceptions to the External Link Standard. On some of those pages, there were multiple exceptions. There were two types of exceptions: (1) Links to external sites that were not identified by the globe image, and (2) Links to City-operated web pages that were inaccurately flagged with the globe image.

Identifying external links is an important consideration for ABQ311. The ABQ311 operators are instructed not to rely on external websites for information that they dispense to the public. If the globe is visible, the ABQ311 operators are instructed not to click on the link.

External links without Globe

Because the City has no control over the content on external sites, a user may be taken to sites containing inaccurate information or announcements of events that many not be “family-friendly.” In other cases, the sites may be purely for-profit and ABQ311 does not want to utilize taxpayer dollars to provide free publicity for a for-profit event. The following links on the “Albuquerque A-Z” index page are external, but are not flagged with the globe indicator:

- Air Force Base, Kirtland (<http://www.kirtland.af.mil/>)
- Bernalillo County (<http://www.bernco.gov>)
- Birth Certificate (<http://www.vitalrecordsnm.org/birth.shtml>)
- Bus Service - Greyhound official web site (<http://www.greyhound.com>)
- Business - New Mexico Small Business Association (<http://www.nmsbdc.org/>)
- Business - Albuquerque Economic Development (<http://abq.org/>)

Globe present on links to City content

Some links were flagged with a globe but actually pointed to City-maintained pages. In the graphic below, the links to “Where’s My Bus” on the left side go to

an external site and are correctly flagged. The links on the right, enclosed by the red rectangle, are not external sites, but take users to City-maintained web content and should not be flagged by a globe icon.

ABQ RIDE Routes				
Route	Route Name and link to Where's My Bus	Availability		Route Notes
1	Juan Tabo 	Weekday and Weekend 		Park & Ride
2	Eubank 	Weekday 	Saturday & Sunday 	
3	Louisiana	Replaced by route 157		Park & Ride

Six department directors, with the highest number of web content issues, were asked to identify the principal cause for why the City’s website contained inaccurate and outdated content. Causes cited included the challenge of keeping up with ever-increasing content, lack of attention to detail by website contributors, too much content and not enough contributors who are the subject matter experts, not noticing old content when adding new content, lack of consistent review, and less scrutiny on infrequently visited pages.

The City’s Website Responsibility Policy states that “Department Directors ensure that their department complies with all websites policies, standards, and procedures. Department Directors ensure that all department content is current and accurate and that inquiries via the web are addressed in a timely fashion.” The City’s Website Content Standard states that “Content on all City web servers must be timely. Content shall be reviewed as often as is necessary to ensure that timely information is always available.”

RECOMMENDATIONS

The CAO should:

- Periodically remind department directors of their responsibility to ensure that website content is accurate and current.
- Encourage departments to establish schedules for review of their web pages. An appropriate review frequency should be selected for each

department to ensure that departmental content is reviewed “as often as is necessary” to comply with the City’s Website Content Standard.

RESPONSE FROM THE CAO

“The CAO agrees and will work with the Department of Technology and Innovation to regularly provide reminder messaging for department directors.”

ESTIMATED COMPLETION DATE

“This will be completed by February 28, 2016.”

2. DTI SHOULD ENSURE THAT ACCESS TO THE CONTENT MANAGEMENT SYSTEM IS PROMPTLY DEACTIVATED WHEN WEB CONTRIBUTORS TERMINATE, RETIRE, OR TRANSFER TO ANOTHER DEPARTMENT.

DTI does not have a formal process for deactivating web contributor access. The City’s Access Revocation Policy states that DTI “permanently revoke a user’s access to a City information technology asset upon written notification from one of the following: The user’s Department Management; The Department owning the information technology asset; The Human Resources Department.” DTI has a procedure in place for deactivating IT access for employee terminations and retirements; however, the Web Team, which is responsible for granting and deactivating website contributor access, is not part of the communication chain of this process.

Until access for web contributors is revoked, user IDs and passwords for the City’s website content management system remain active. Such access could potentially be used to post unauthorized content to the City’s website, such as inflammatory, inappropriate, or malicious statements.

RECOMMENDATION

DTI should ensure that access to the content management system is promptly deactivated when web contributors terminate, retire, or transfer to another department by incorporating the following into the department’s procedures:

- Copy the Web Team via email on all termination, retirement, and transfer requests processed by the Service Desk.
- Periodically query department directors on whether access for each web

- contributor is still needed.
- Consider automatic lockout of web contributor accounts after a period of inactivity (for example, 90 days).

RESPONSE FROM DTI

“DTI agrees and has added the Digital Engagement Manager to the Terminated Employees Report distribution. Additionally, the Digital Engagement Manager will take a more proactive role and query departments regarding access for each web contributor.”

ESTIMATED COMPLETION DATE

“This was completed in December 2015.”

CONCLUSION

By taking additional steps to reduce instances of inaccurate and outdated content, quality control will be improved, and the City will have greater assurance that citizens, ABQ311, and other website visitors will obtain timely and accurate information when visiting the City’s website. In addition, DTI can improve internal controls by promptly deactivating web contributor access, which will reduce the risk that unauthorized content is posted to the City’s website by former website contributors.

DTI should continue to refine its policies and standards related to website management in alignment with evolving best practices. Along with technical support, the DTI Web Team should also continue providing guidance on web content best practices and City website standards to website contributors.

We greatly appreciate the assistance and cooperation of the Department of Technology and Innovation, the Department of Finance and Administration’s ABQ311, and other departments during the course of the audit.

Senior Information Systems Auditor

REVIEWED:

Internal Audit Manager

APPROVED:

Debra Yoshimura, CPA, CIA, CGAP
Director, Office of Internal Audit

APPROVED FOR PUBLICATION:

Chairperson, Accountability in
Government Oversight Committee

APPENDIX A

OBJECTIVES

The audit objectives are:

- Is content on the City’s website accurate, complete, and up-to-date?
- Is the responsibility for maintaining website content adequately communicated to department directors?

SCOPE

Our audit did not include an examination of all functions and activities related to management of the City’s website. Our scope was limited to the objectives above.

This report and its conclusions are based on information taken from a judgmental sample of web pages reviewed on December 23, 2015, and do not represent an examination of all website pages and content. The audit report is based on our examination of activities through the completion of fieldwork on January 26, 2016 and does not reflect events or accounting entries after that date.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

METHODOLOGY

Methodologies used to accomplish the audit objectives include but are not limited to the following.

- Reviewed the most-accessed pages within the City’s www.cabq.gov website,
- Reviewed DTI Policies and Standards related to management of the City’s website,
- Reviewed Associated Press web writing style guides,
- Reviewed Web Content Accessibility Guidelines (WCAG) and Federal Section 508 guidelines for enhancing access to electronic information for people with disabilities,
- Interviewed DTI management and staff regarding training of website contributors,
- Reviewed DTI training materials, blogs, and email communication provided to City

- website contributors, and
- Interviewed the ABQ311 manager to discuss the call center’s use of the City’s website to respond to citizen inquiries.

The audit examined live content on the City’s website. The majority of testing was performed on the most-viewed pages on the website, as determined by unique page views for the year ended June 30, 2015. Unique page views are a measure of pages accessed by a single user during a single internet session. Unique page views are considered more meaningful in assessing the number of distinct visitors to a page than raw page view counts, which only measure number of times a page was viewed in a web browser.