

Explaining Audit Work: Moving from Using Graphics within the Written Narrative to Web-based Audit Reports

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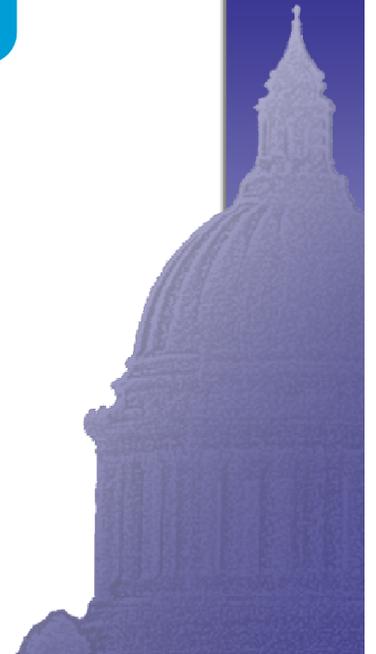


Overview

- 1 Why and how JLARC wanted to get info in various formats to users
- 2 What technology solutions we decided to use, and why
- 3 Writing for the web, content challenges
- 4 Technical answers to content challenges
- 5 How your agency can do something similar

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Why and how JLARC wanted to get information in various formats to users



Multiple Audiences, Multiple Media, Multiple Challenges

- Multiple Audiences
 - ◆ Legislators and Staff, Agency Directors and Managers, the public and press
 - ◆ Peers and professional auditing reporting standards
- Consumers use multiple media sources
 - 1980s*: newspapers and magazines
 - 1990s, 2000s*: lap tops
 - 2010*: smart phones, tablets
 - 2015*: entire legislature with Surface Pros



Goal: Improve Access to our Work

- Recognized JLARC staff ingenuity and technological opportunities
- Brought together analyst and technology development and graphic design staff
 - ◆ Developed a template
 - ◆ Report message and writing process adjusted
 - ◆ Pilot a study where report message and recommendations not too complex
- Launched first web-based report in Sept. 2014

<http://www.leg.wa.gov/JLARC/reports/AltPubWorksSunset>



JLARC Report

The Legislature Should Reauthorize the UW Medical Construction Contractor Alternative Process Because Timeliness and Quality Have Improved

Sunset Review Preliminary Report, September 2014

RESULTS what we learned	REPORT details	RESPONSE from agencies	MORE about the study
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The Legislature created an alternative process in 2010 that allows the University of Washington (UW) to pre-qualify contractors for certain critical patient care facility construction projects. These projects cost \$5 million or less. The alternative process allows UW to limit distribution of bid solicitations to contractors that have demonstrated their ability to complete complex projects in a patient care environment.

The legislative Auditor recommends that the Legislature continue the alternative process because its use is reducing contracting time, and contractor quality ratings have improved. The alternative process terminates June 30, 2015, unless the Legislature reauthorizes it. The Legislature tasked the Joint Legislative Audit and Review Committee (JLARC) with a sunset review before this date.

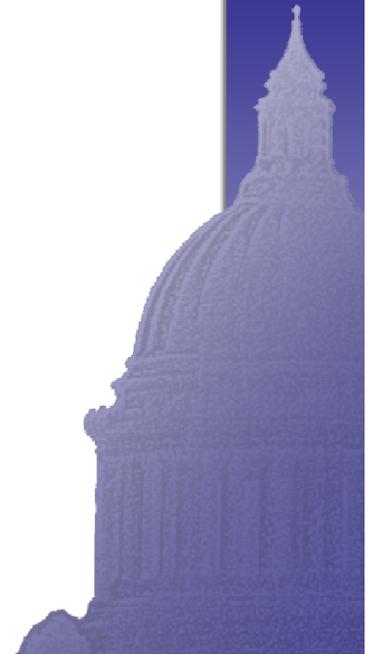
The report also includes three recommendations for UW, two to improve the timeliness of these projects at Harborview Medical Center and one to improve tracking the use of minority-owned and woman-owned subcontractors.



Construction in progress on a hybrid cardio vascular operating room.

What technology solutions
we decided to use, and why

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Proactive planning for the report design

We wanted it to be:	So we:
Mobile-friendly	Used responsive web design: page adapts to any device's screen size
Easy to maintain and edit	Designed it as a single page. Print version dynamically grabs content from the report page.
Printable	Used CSS to control print appearance
Both a summary and the full report text	Used tabs and other widgets for "progressive disclosure"
Accessible for screen readers	Firefox plugin provides iCITA accessibility suggestions
Possible to link directly to a specific section	Included "deep linking" code on tabs.

Decision: what software should we use for web report creation and editing?

**SharePoint
or other proprietary Content
Management System**

**Dreamweaver
or other editor for non-
proprietary web code**



PROS

- Simpler content editing interface for end users
- User permission control a breeze
- Tech support available
- Custom looks, exceptions easier for developer to accommodate
- Not reliant on a big company
- Two words: cool widgets

CONS

- Custom looks or exceptions difficult to accommodate. Consistency across all pages is purposely enforced in CMS.
- Proprietor could make radical changes or discontinue support
- Interface is more intimidating for novice end users
- Files require knowledgeable, careful management
- Not supported by our tech group

Decision: when and how should we convert the content to web format?

During report drafting



After writing and reviews

PROS

Authors and reviewers can view report in web format anytime

- Opportunity to adjust content for best web look and function

Single transcription would be easier on support staff

- Smaller chance of introducing errors

CONS

Our strategy for first few reports

If Authors perform edits themselves

Authors must be proficient users of web editing software

If Support staff make edits on request

Potential workload issues, bottlenecks for support staff

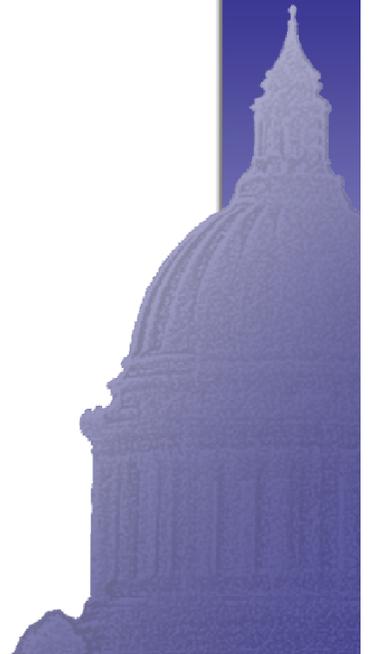
- Possibility for editing errors

Authors and reviewers don't see report in web format until writing is finished

- No chance to adjust content for best web look and function

Writing for the web,
content challenges

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Audit reports have multiple audiences that require different levels of detail

- JLARC assigned study of WSDOT's long-term bridge and pavement cost estimates
 - ◆ Required to contract with engineers
- Challenge: Dense engineering report – how present to multiple audiences?
 - ◆ Members very unlikely to read full report – want “bottom line”
 - ◆ Committee staff want to understand findings, not interested in earning engineering degrees
 - ◆ Agency engineers/staff want to understand details to implement recommendations

Web-based reporting can meet the needs of each audience

Transportation Report

- Members:
“Just the facts”
- Committee staff:
Detail behind
the findings
- Engineers or insomniacs

Primary Challenge:

While developing the report, it was difficult to visualize how it would look in web format on various devices

JLARC Report

WSDOT Can Provide Reliable Long-Term Pavement Estimates, but Accuracy of Bridge Estimates Is Uncertain

Preliminary Report, December 2014

RESULTS what we learned	REPORT details	RESPONSE from agencies	MORE about the study
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This is the second of [two reports required by the Legislature](#) to review the methods and systems the Washington State Department of Transportation (WSDOT) uses to develop long-term estimates of maintenance and preservation needs. In this second phase, JLARC contracted with expert consultants to review how WSDOT estimates future needs for highway pavement and bridges. They found that WSDOT:

- Maintains accurate data for pavement and bridges.
- Can provide reliable long-term (10-year) estimates for pavement maintenance and preservation.
- Did not use best practices to develop long-term estimates for bridge maintenance and preservation needs, so the consultants could not verify the accuracy of the bridge estimates.

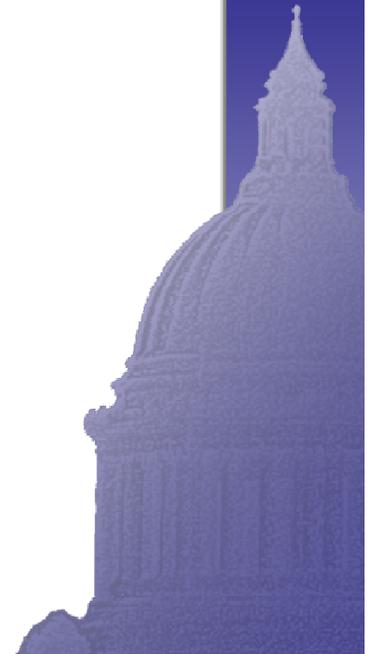
The Legislative Auditor offers recommendations to improve WSDOT's bridge estimates and to develop a process to improve stakeholders' confidence and understanding of how WSDOT develops its estimates.

JLARC's consultants identified key components that should be included in a 10-year estimate of maintenance and preservation needs. These components, as well as WSDOT's ability to provide them, are summarized below.

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Technical answers to
content challenges

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We wanted it all... but how to keep the Pros and lose the Cons?

During report drafting



PROS

Authors and reviewers can view report in web format anytime

- Opportunity to adjust content for best web look and function



CONS

When support staff performed edits for authors, it created

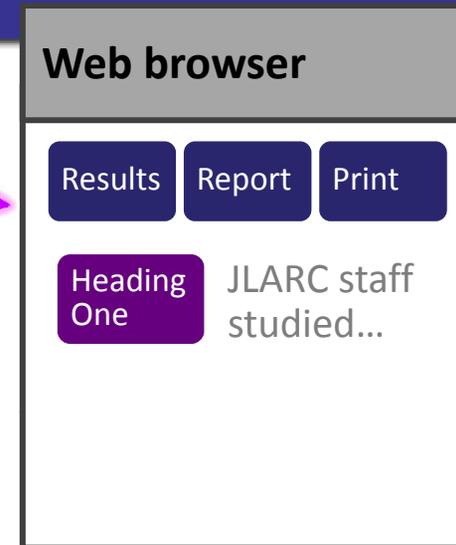
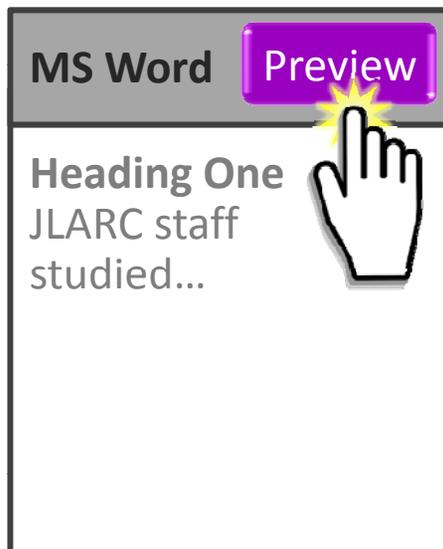
- workload issues, bottlenecks
- potential for errors during edits



- Let authors use a simple, familiar program and preview the report in web format
- Free support staff time, reduce stress and chance of error during editing

Macro written in Visual Basic creates a web page from Word content

- Authors edit content in Word format, as they have for years
- They click a custom toolbar button



Word Headings become web page tabs
Word Tables become sortable web tables
Word Comments become pop-ups

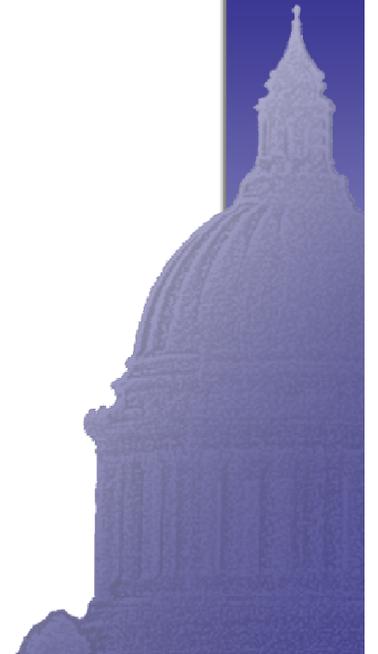
More reasons to streamline

- JLARC reviews about 22 tax preferences annually. The compiled Word report was rarely under 200 pages long.
- Prospect of converting all of that content manually was daunting, so created a variation on the regular report macro and report style
 - ◆ Different look
 - ◆ Tax review chapters sent to a different file location than JLARC reports
 - ◆ Still in the works – report out in July.

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How your office can do something similar

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Design for your audience

- Identify audience groups and rank them by their importance to your mission:
 - ◆ Bosses, customers, your most avid fans
 - ◆ Check Google Analytics or other tool to learn who's accessing your current online content
- Make it convenient for your primary audience groups to consume your content
 - ◆ Find out what hardware/software they use
 - ◆ You can't go wrong with responsive web design
 - ◆ Printing still important to some readers. Cascading stylesheets can help with this.

Try progressive disclosure

- Top-level outline headings: short, informative.
 - ◆ Maybe the greatest challenge!
- Give brief elaborations under those headings
- Provide options for the “engineers or insomniacs” who want the more detail
- Many strategies to choose from:
 - ◆ Tabs, accordions, other widgets designed to show more/less with a click
 - ◆ Sortable, searchable tables
 - ◆ Popup links with glossary or descriptive info

Find out about your technical resources

You may need:

Infrastructure for files

MS Word for text editing
plus a good web editor/
website file manager

Image editor for graphical
content

Javascript libraries or
plugins for widgets

Such as:

Intranet website

Dreamweaver,
many others

Photoshop,
Elements, Gimp

Zozo Tabs,
DataTables, Leaflet

Goals and challenges moving forward

- Staff capacity, training
- Style guides and training for analysts to write for the web
- Dynamic data, interactive graphics
- Sound, video
- How will we keep up with future trends and technology?
- Getting help – human centered design engineering firm

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