Town of Arlington
Office of the Town Manager

Joan Roman
Public Information Officer

730 Massachusetts Avenue
Arlington MA 02476-4908
Phone (781) 316-3350
Fax (78l) 316-3019
jroman@town.arlington.ma.us
www.arlingtonma.gov

To: Adam Chapdelaine, Town Manager; Andrew Flanagan, Deputy Town Manager; Board of Selectmen, Disability Commission
CC: Joseph Connelly, Director of Recreation; Kathy Bodie, Superintendent of Schools; David Good, Chief Technology Officer; Claudia Bertoli, School Webmaster
RE: Institute for Human Centered Design (IHCD) Website Review Report
Date: December 22, 2014

Please find enclosed the IHCD report and related correspondence. The report was based on an extensive evaluation conducted by IHCD and performed prior to the launch of the Town's main site (arlingtonma.gov) in July of 2014. The evaluation helped informed workflow related to ADA compliance for staff training and helped identify ADA deficiencies in the site. The Town has been addressing these issues on a rolling basis since the draft report was received in August. Additional updates are being performed.

Since the initial draft of the report was provided, the Town has made significant updates toward ADA compliance. Since many items changed since the site was launched in July, the addendums should help the reader more easily understand the Town's progress toward online ADA compliance. Because the Town has several website gatekeepers and vendors, please find enclosed separate memos providing overviews of activities performed, or to be performed, by these parties.

- Correspondence between IHCD and Town, August 2014
    - School Department Response
    - Recreation Site Response
    - Town site (arlingtonma.gov): Vision Internet Contrast Analyzer Report November 6, This report shows before and proposed screenshots to address contrast issues cited in the IHCD report. All proposed changes have been approved and will be updated in early 2015.
- IHCD Report

Town of Arlington
Office of the Town Manager

Joan Roman
Public Information Officer

730 Massachusetts Avenue
Arlington MA 02476-4908
Phone (781) 316-3350
Fax (78l) 316-3019
jroman@town.arlington.ma.us
www.arlingtonma.gov

To: Institute of Human Centered Design (IHCD)
Cc: Joe Connelly, Director of Recreation
Re: Reply to draft report, Website elements (arlingtonma.gov, mygovhelp.com/arlingtonma)
Date: August 12, 2014

Dear IHCD team,

First, thanks so much for your thorough evaluation of the Town of Arlington's online properties and working with us as we geared up to launch our new site. Your participation and feedback throughout this process has been positive and helpful toward our launch. We have read the report and agree with your overall conclusions that we need to improve integration with 3rd party vendors/inline systems. Because the timing of the ADA testing was prior to launch, the IHCD was not able to accurately view these integrated elements. This response is mostly to highlight these items. It is our hope that you can incorporate these changes in the final report to better reflect our accessibility efforts with respect to the Town of Arlington's online properties.

For your convenience, I have denoted our comments by page below.

Our work here is not done as there are additional items mentioned in the draft report that we are currently working with our vendors to modify, as possible. In this response we wanted to at least identify items that were obvious offenders that could not be appropriately tested by IHCD because the site was in the development environment, plus any easy fixes. Now that the site is live, IHCD has a more accurate view of the Town's online properties.
(this would require an additional review with new user/expert, additional elements require a contract amendment)

We very much look forward to the updated report. Please note, I will be out of the office until September 2nd and unable to reply to any comments until my return.

Sincerely,

Joan Roman

P.S. Please let us know how we might be able to view the video of user testing. Dropbox, DVD or other delivery mechanism.
I will try using "yousendit"

Cover – If you can include a screen grab of our new site, that would preferred.
Changed

Page 10 – font size. The default font size for the new website is 12 pt. Also, the +/- font size feature was not enabled in the development site you were testing. It is enabled on the live set. Have a look.

Page 11 – Consistent use of layout throughout the website. When we launched the site, we instituted iframes so we would have this consistency, but IHCD could not test this in development mode. When we launched, the main side (arlingtonma.gov) iframe was applied to the Request/Answer Center (mygovhelp.com/arlingtonma), the Online Bill Payment (arlserver), and the permit look up (Inspectional Services). This change may alleviate the concerns with custom left navigation use for within a department. The custom left hand navigation was the reason we could construct a more cleaner site, which has so far been met positively. Left hand navigation leading to no content will be remedied.

Page 20 – the calendars for "more meetings," "more events," and "more community" have been created (they were not at the time of testing, but were in time for launch.
Mentioned this issue has been fixed

Page 20 – Alt tags for rotating images/carousel have been fixed.
For the image yes, but not for the control button, the position of the control button on the page could also be improved.

Page 22 – We do not post job applications online, I believe what you may have seen was a sample application.
We recommend offering online application when possible

Page 23 – The iframe has fixed the issue with inconsistent navigation.
http://arlingtonma.gov/departments/treasurer/look-up-pay-bills

Yes, however, the issue of navigation order as not been adressed

Page 24 – Pay Bill link was not online when you tested, it was at launch.
http://arlingtonma.gov/departments/treasurer/look-up-pay-bills

Page 24 – "can't read gray menu bar" I believe you mean the main navigation on the online bill look up page. If so, this navigation was replaced with the new site's iFrame and should no longer be an issue. If not, please clarify. This change should also take care of the google concern as that graphic is gone.
Yes, updated the content there

Page 26 – The creation of the 3 calendar break out (Community, Town Meetings, All Events) should alleviate most on this page. Additionally, all categories were updated prior to launch to remove abbreviations.

Page 27 – Based on your recommendations we have updated the navigation to Where to Vote/Polling Locations.
That works

Page 28 – Voter Registration link is working

Page 28 – Past Election Results – Question. If we were to move this into a sub-navigation of 2013-2000, would screen readers force the user through this sub-navigation as well? Trying to understand what is happening in this environment to find a solution.
No, Move those into a subfolder would ease the navigation because the User with screen reader would not have to go through all the link in the subfolder, unless he click on it to open the folder

Page 30 – All alt. tags for Public Works have been updated.

Page 31 – Dog license form is now on the "Applications, Regulations, & Permits" page (under Clerks).
This issue is not fixed and the application form is still not accessible, there should be a way to access this form from the page mentioning dog licencing

Page 32 – All alt. tags for Police have been updated

Page 33 – All alt tags for Town Manager (Arlington Visual Budget) have been updated.

Page 34 – All alt. tags for Recreation news articles (those that live on arlingtonma.gov) have been updated.

Page 35 – We updated the footer prior to launch to go to the correct pages, based on your suggestions we expanded the description for the main switchboard number and hours in the footer as well. Contact Town Hall is under "I Want to…" and was probably added after your report. User can also get the full contact list by pressing "Departments" in the main navigation.
The term "mainswitch board" is a little technical for some User, maybe something like "Main phone number" would be more intuitive

Page 36 – We modified the Purchasing section quite a bit prior to launch and consolidated it all to one page and updated the footer link to go to the correct page.

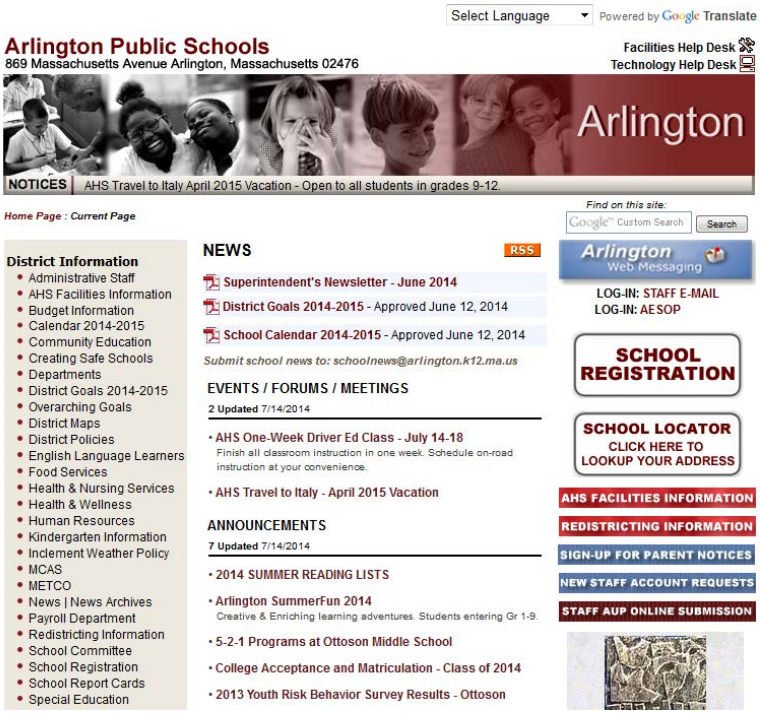
Page 37, 38 – This frame within a frame issue was resolved post launch. There is no way IHCD could have seen the intended view prior to launch. Please review the Request/Answer Center to view how these elements work together. http://arlingtonma.gov/services/request-answer-center
The Iframe seem to be an improvement from what was there before, although some of the link on the front page seem to be not accessible to the keyboard, there is also some incompatibility with some screen reader test (JAWS)

Page 48 – The time was changes to ETA prior to launch (as oppose to military time)

Page 48 – the Calendar should display the current month, unless the user has changed it.

School Department

http://www.arlington.k12.ma.us/home/



Key findings in this section include the following:

- Very busy layout;
  Redesign - Layout was cleaned and trimmed down, has dynamic horizontal menu at top of site
- The buttons on the right side of the page are hard to read;
  Redesign - Right side buttons were removed
- PDF documents are not accessible; PDFs will be accessible starting in the new school year. Documents such as Budget Books, Handbooks, etc will be looked at carefully when created to ensure functionality is retained.
- The color coding does not seem to make sense;
  Redesign - has standard colors
- There is not a “Heading,”;
  Added Heading tag on homepage
- A lot of images are used for decoration (e.g., Bullets) and a lot of spacer images;
  Removed bullet graphics removed
  decorative image should have null=”” alt text; and
  Alt text null added to all spacers
- The banner image does not have alternative text.
  Alt text added to banner graphic and the APS text Logo graphic

TOWN OF ARLINGTON

Joseph Connelly
Director of Recreation

PARK COMMISSIONERS
Leslie Mayer, Chairperson
Jen Rothenberg , Vice Chair
Shirley Canniff
Donald Vitters
Jim Robillard
Elena Bartholomew, Associate
Peter Hedlund, Associate

Recreation Department

M E M O

To: Joan Roman, Public Information Officer
From: Joe Connelly, Director of Recreation
Date: November 24, 2014
Subject: ADA Web Evaluation

I have received the final web evaluation report from the Institute of Human Centered Design and have forwarded it to Myrec who is our host for Arlingtonrec.com. Myrec is in the process of reviewing the IHCD recommendations. I will continue to work with Myrec to make the necessary changes and modifications to our Arlingtonrec.com site.

All proposed changes have been approved and are slated to be implemented in early 2015

Town of Arlington - Contrast Analyser Website Review Report by Vision Internet
Report Performed on November 6, 2014 by Valerie Sindal Gillespie

---

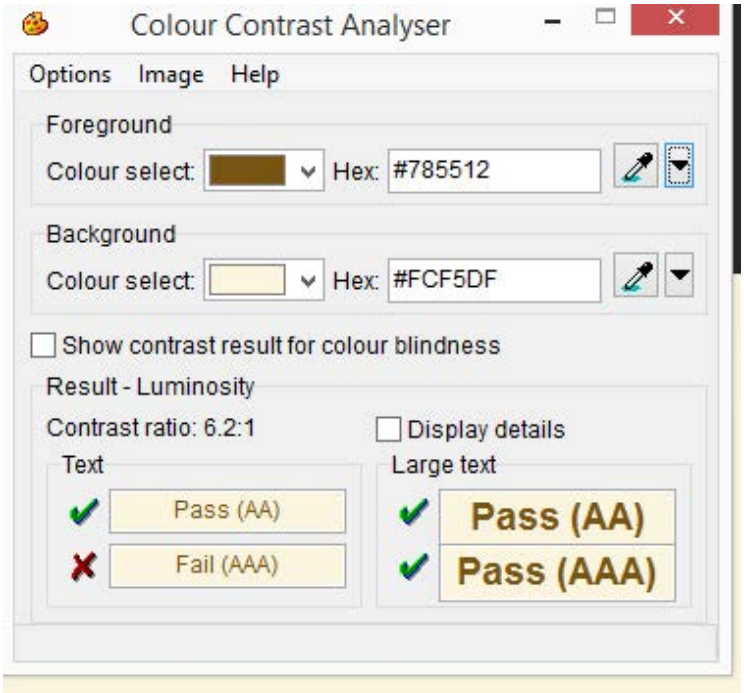
In response to the http://humancentereddesign.org/ Town of Arlington - Website Review Report:

Contrast Issues with Text
The WCAG 2.0 Requirement's 1.4.3 Contrast (Minimum) (Level AA)
Text and images of text need to have a contrast ratio of at least 4.5:1
Large text (over 18 point of 14 point bold) has a contrast ratio of at least 3:1

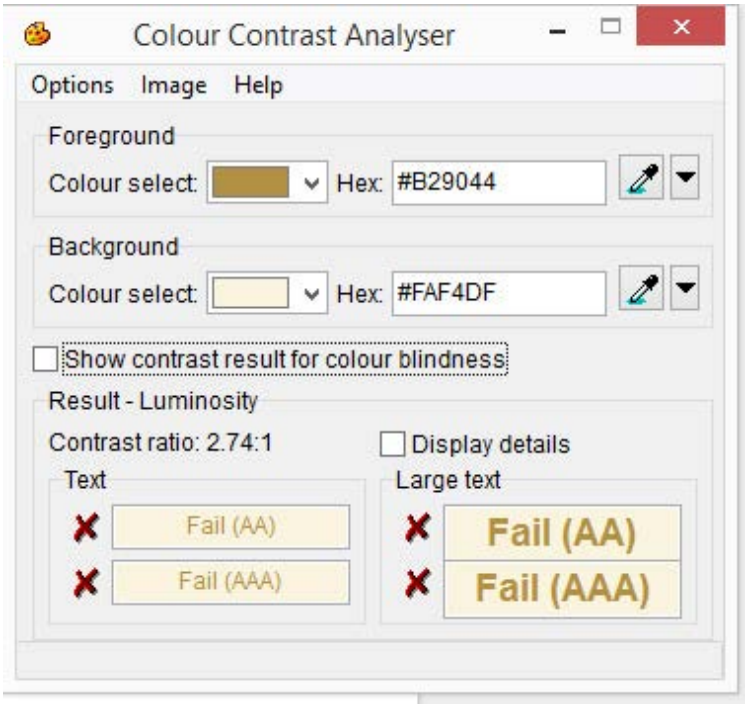
ITEM 1: Calendar List on Home Page - against the light peach color background

EXISTING:

Currently the large text displaying the 'date' is at:

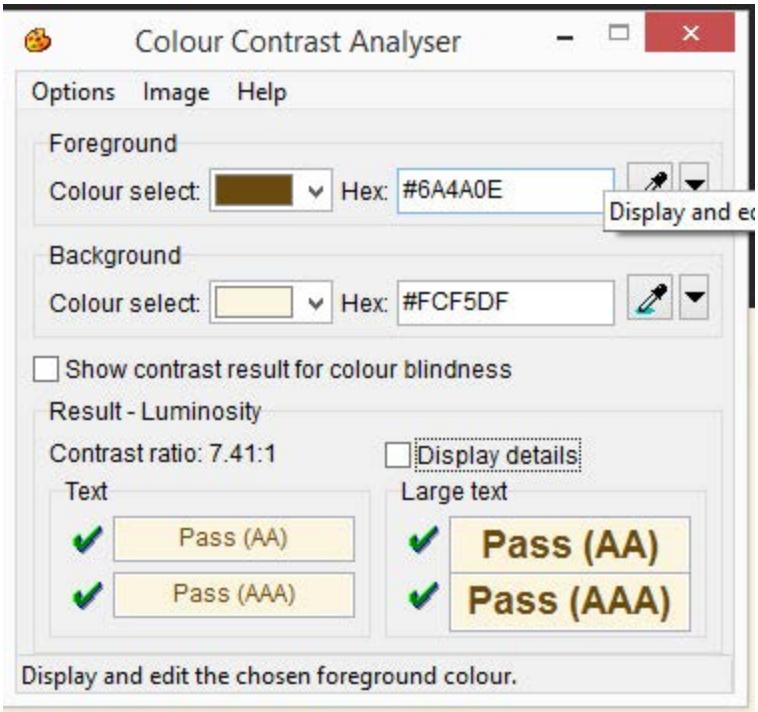


While the small text displaying the event title over the light peach background is at:

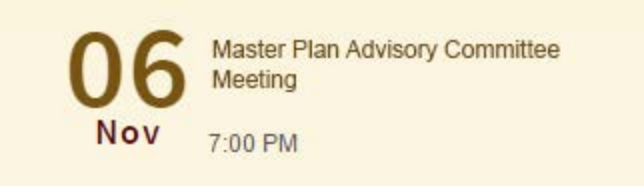


PROPOSED:

We will keep the large text as is since it has passed the CCA for both Level AA and Level AAA. But for the small text we will change to:



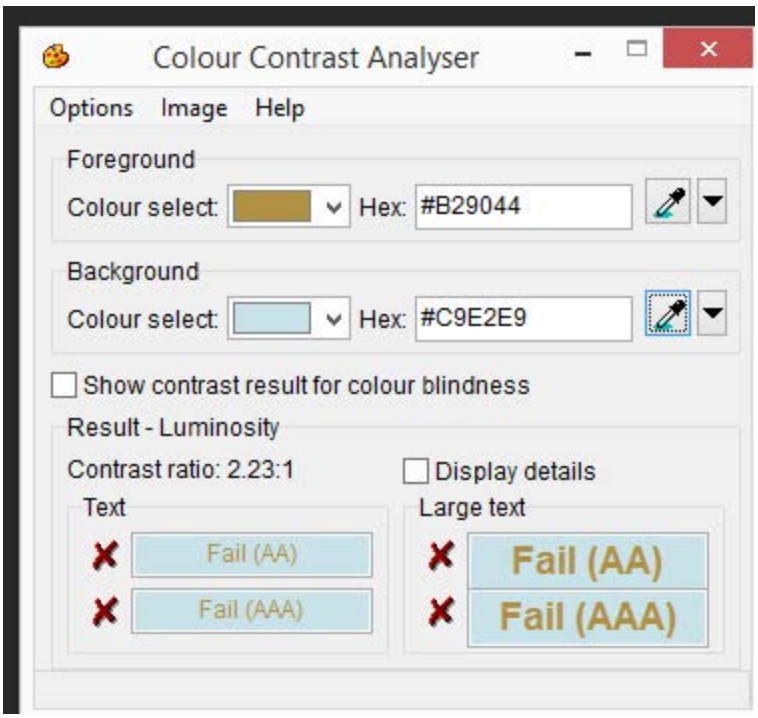
The new visual of the area discussed will be:



ITEM 2: Calendar List on Home Page - against the blue color background

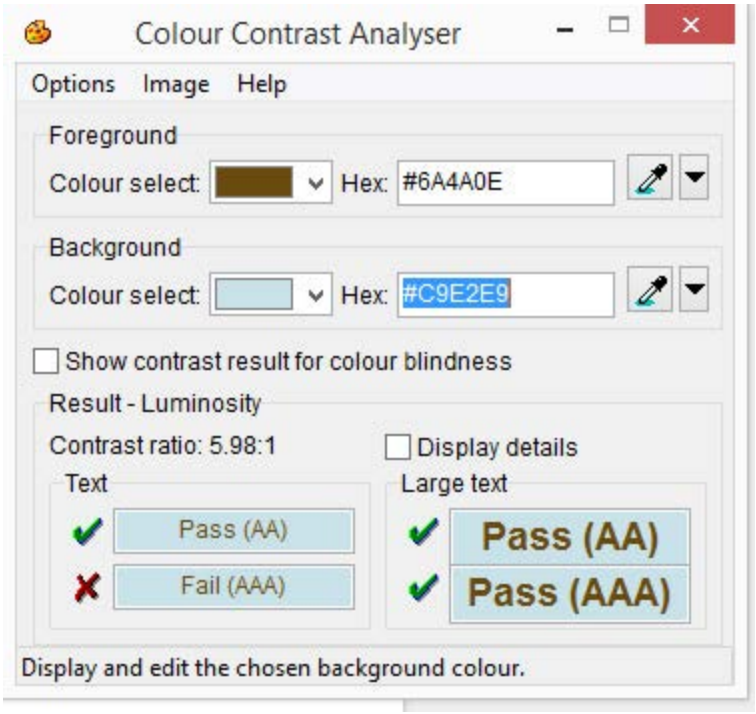
EXISTING:

Currently the event text title over the blue background is at:



PROPOSED:

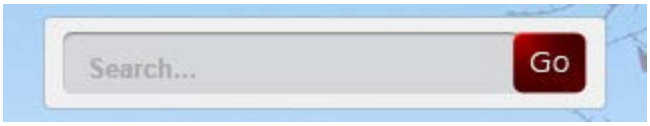
We will change the text to the same hex# as the ITEM #1 because we have to have the same color for consistency:



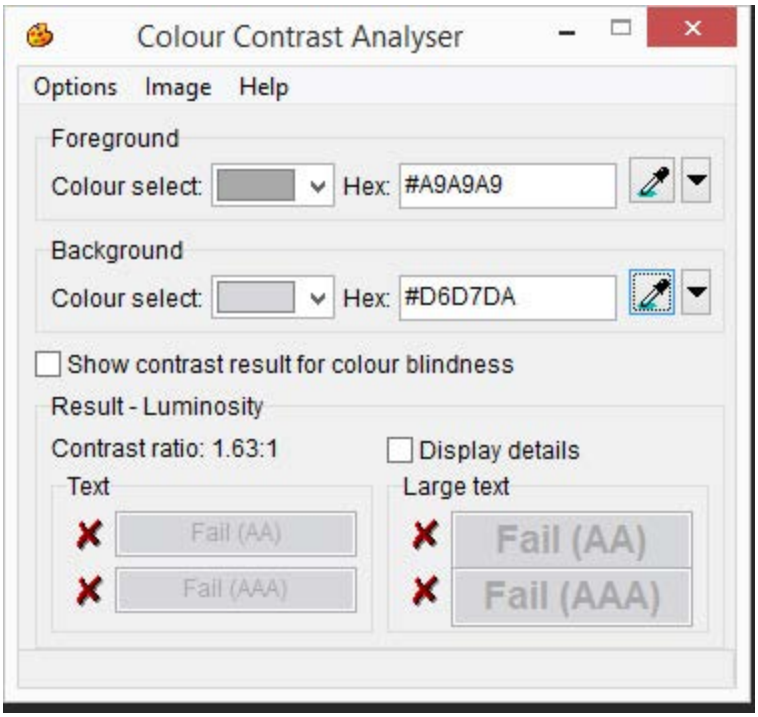
The new visual will be:

ITEM 3: Search box on Home Page

EXISTING:

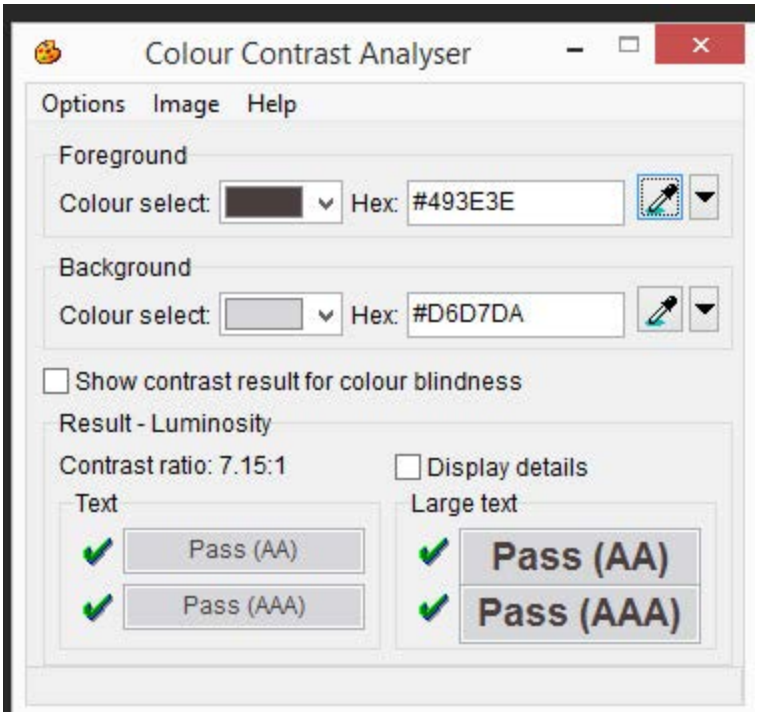


Currently the text “Search” over the background field is at:

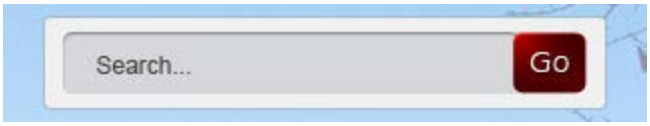


PROPOSED:

We will change the “Search” text to:

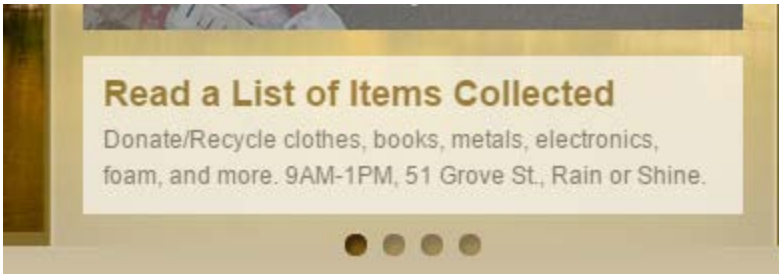


And the new visual will be:

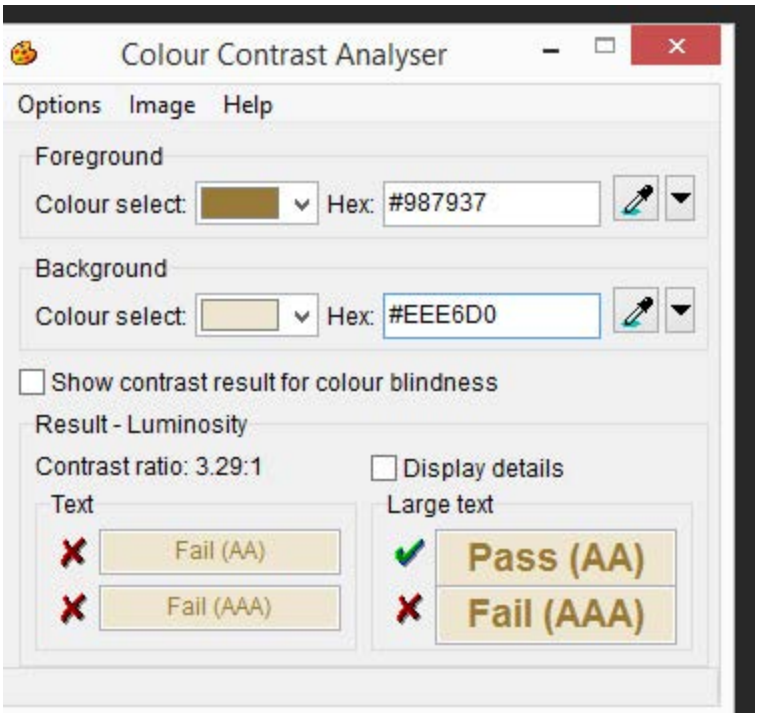


ITEM 4: Home page Slide Title

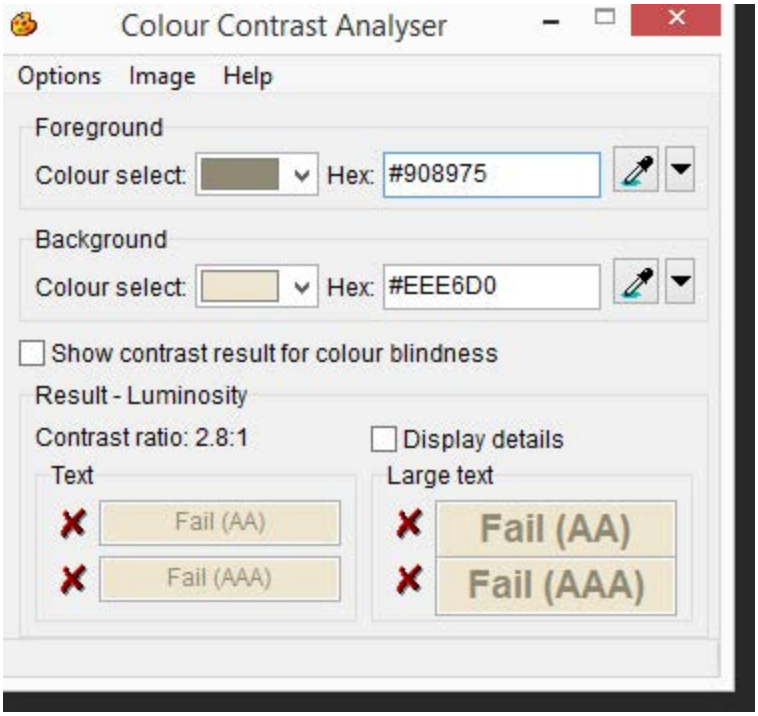
EXISTING:



The Large Text is currently at:

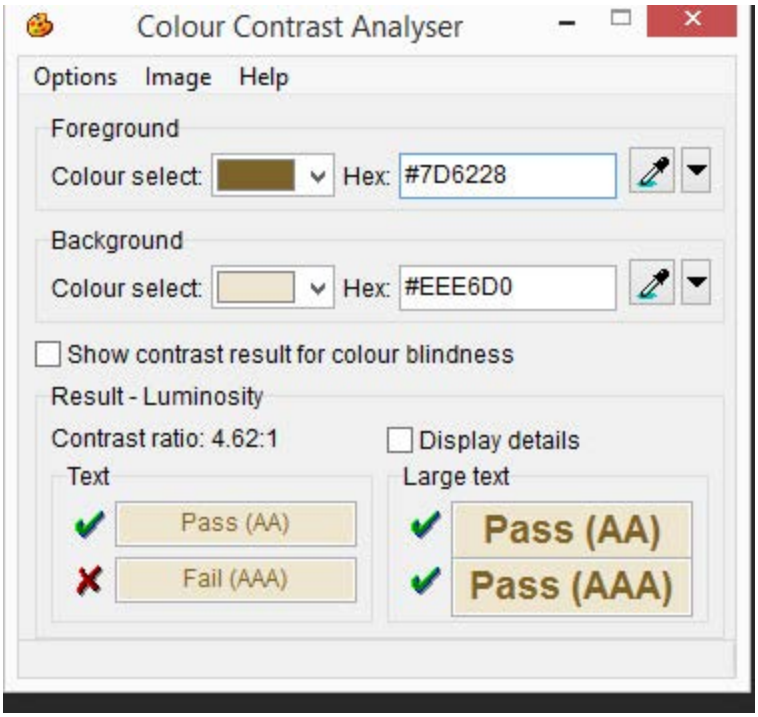


While the small text is at:

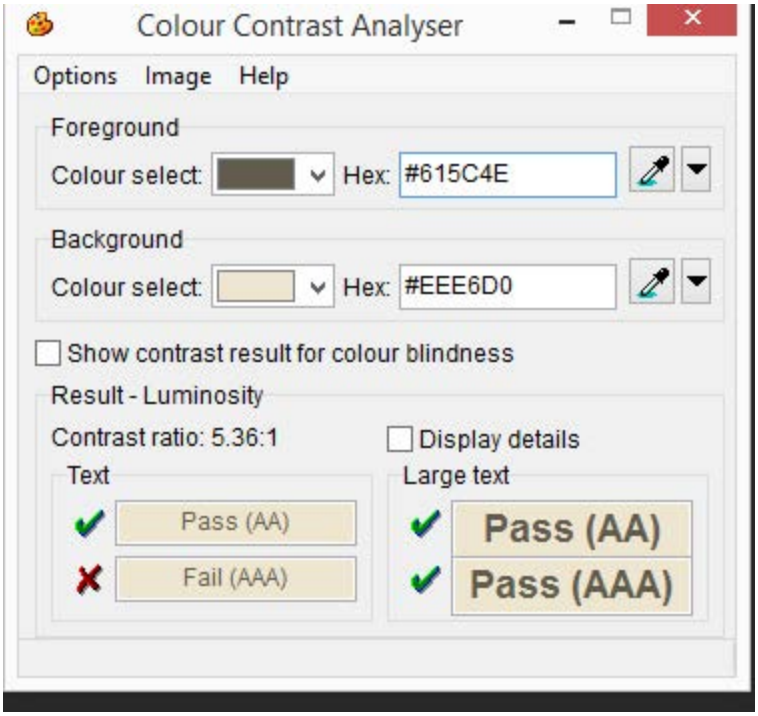


PROPOSED:

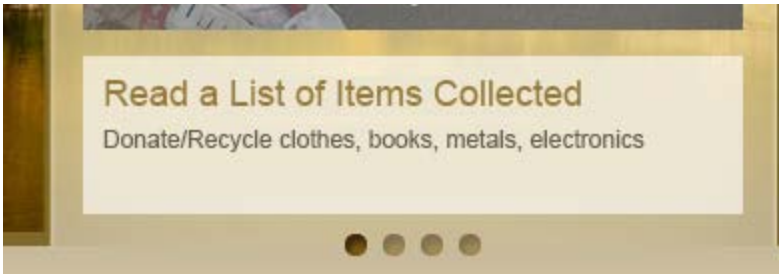
We will adjust the Large text to:



And adjust the small text to:



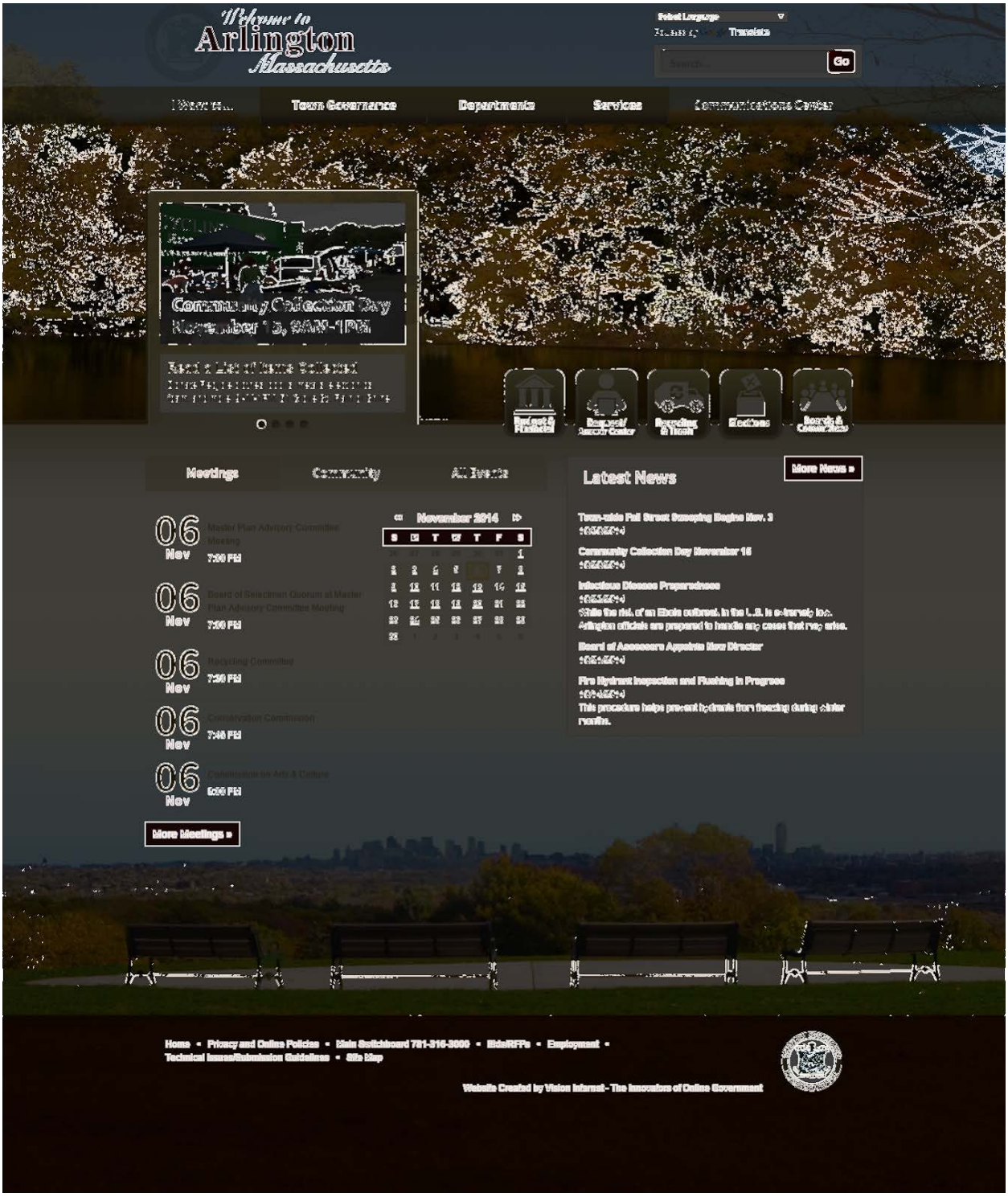
And the new visual will be:



Town of Arlington - Contrast Analyser Website Review Report by Vision Internet
Report Performed on November 6, 2014 by Valerie Sindal Gillespie

---

Google Chrome Contrast Analyser Report for the Home Page:

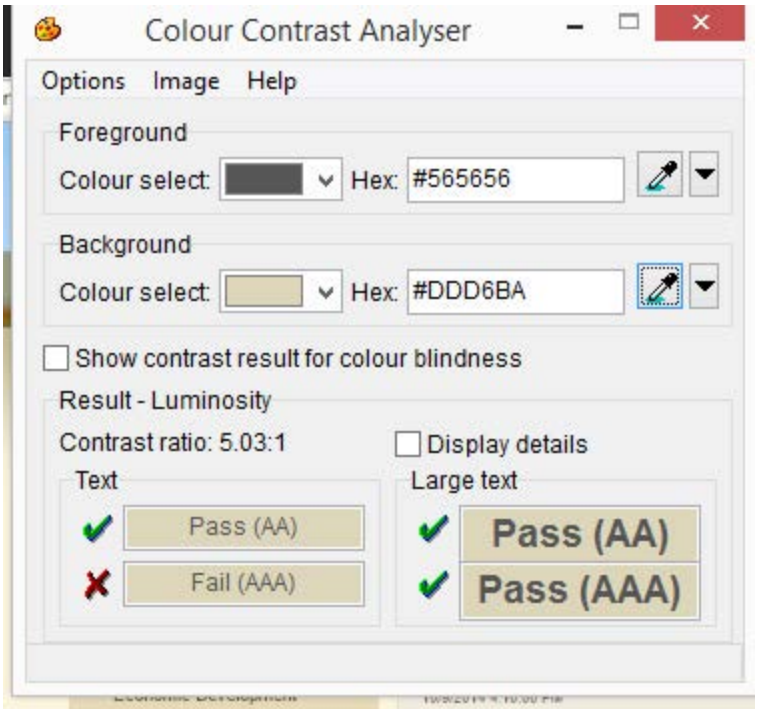


If the text has outlines around it, the contrast level passes. Note: text may not be readable because of the overlay. It's contrast to be looking at.
http://accessibility.oit.ncsu.edu/tools/color-contrast-chrome/

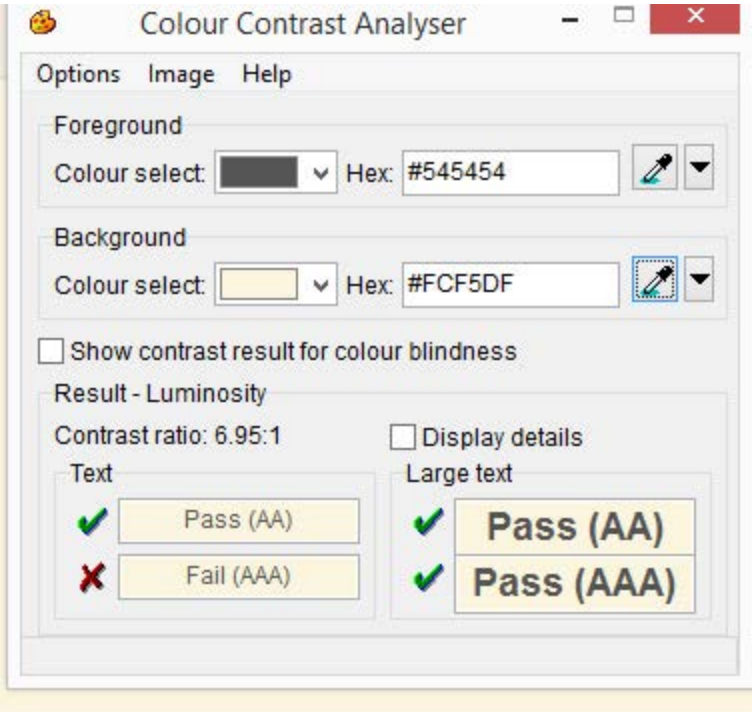
ITEM 5: Interior Page: Planning & Community Development Page

EXISTING:

The “breadcrumbs” are set at the following values and because we have passed the Level AA we are not going to propose a new color:

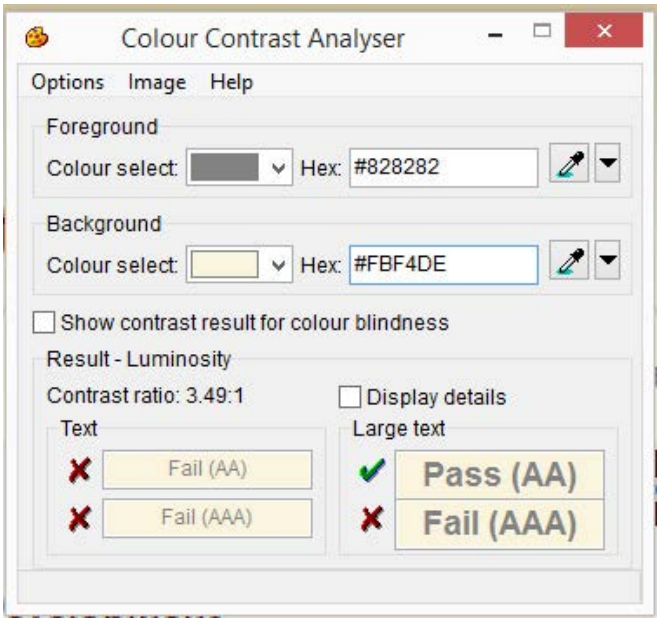


The current “Mission Statement” text area is at the following values and because we have passed the Level AA we are not going to propose a new color:



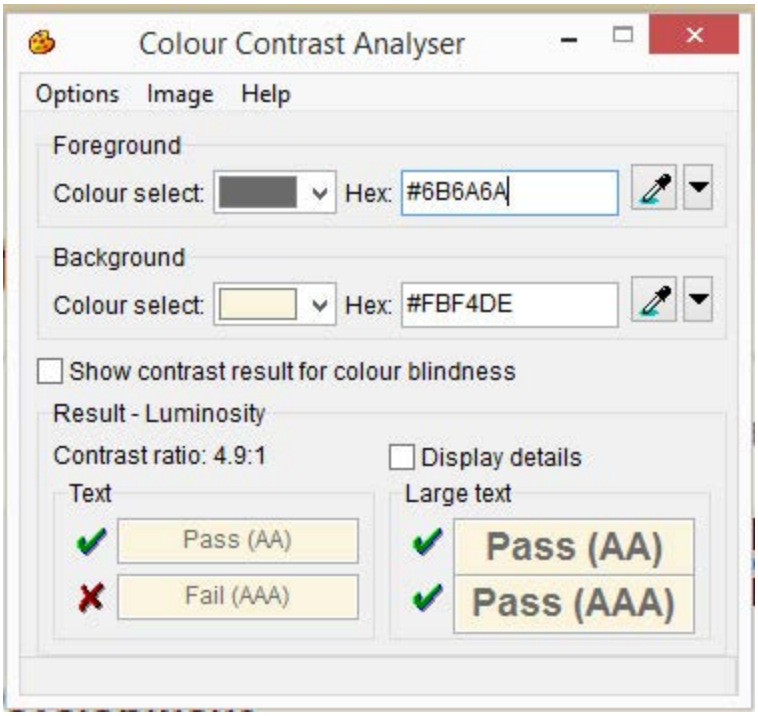
The entire “Contact” area of this page has passed both Level AA and Level AAA so we are not proposing new colors for the Contact section.

The current “Font Sizing” text is at:

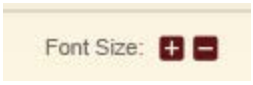


PROPOSED:

The new “Font Sizing” should be at:



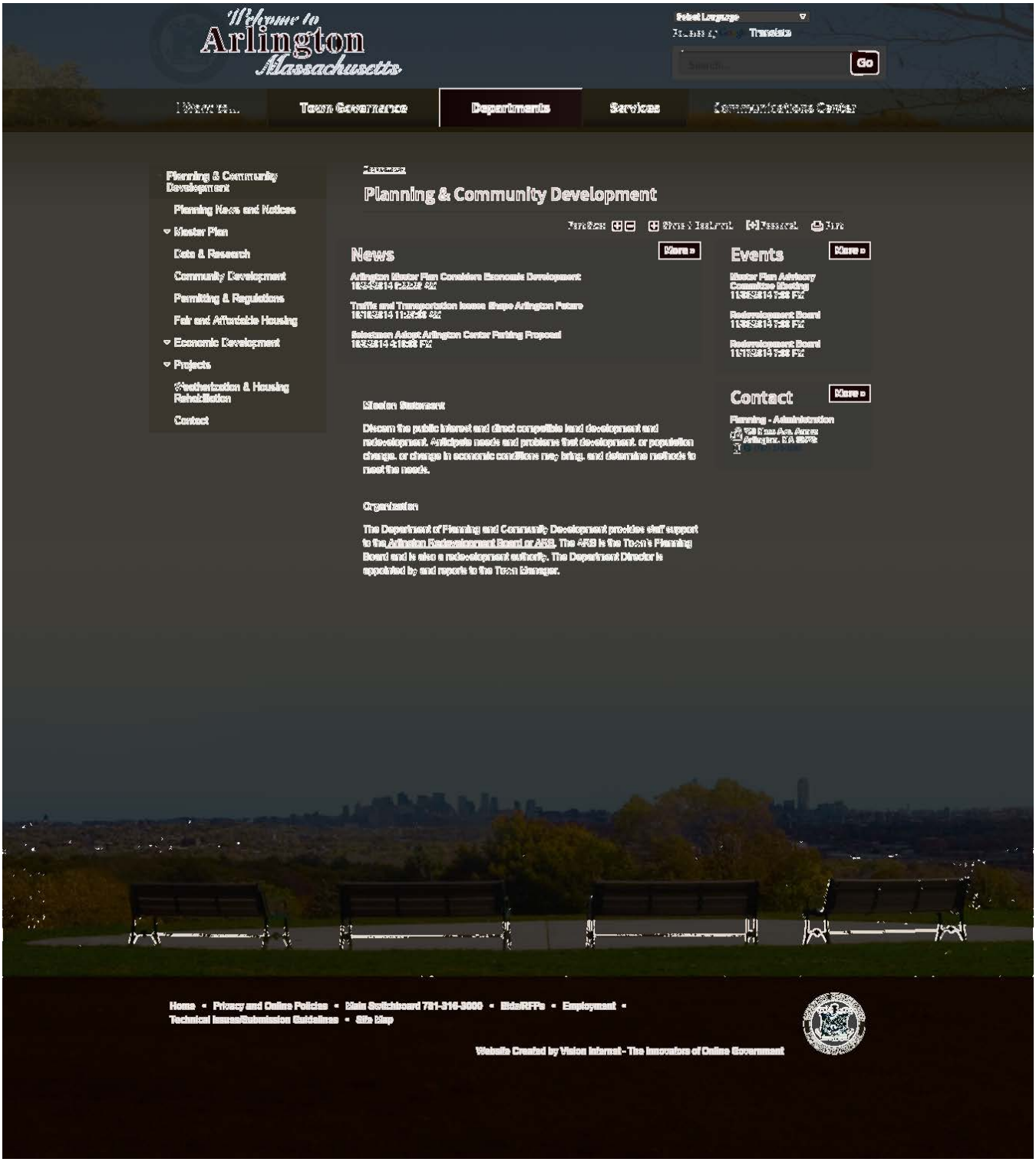
And the new visual will be:



Town of Arlington - Contrast Analyser Website Review Report by Vision Internet
Report Performed on November 6, 2014 by Valerie Sindal Gillespie

---

Google Chrome Contrast Analyser Report for the Interior Page:



If the text has outlines around it, the contrast level passes. Note: text may not be readable because of the overlay. It's contrast to be looking at.
http://accessibility.oit.ncsu.edu/tools/color-contrast-chrome/

Town of Arlington

Website Review Report

Prepared by
The Institute for Human Centered Design

September 20, 2014

Institute for Human Centered Design

200 Portland Street, First Floor
Boston, MA 02114
617-695-1225 voice/tty
www.HumanCenteredDesign.org

Table of Contents

Executive Summary 2

Overview of Web Evaluation Process 5

Review of Key Findings 9

General Comments 13

Page-by-Page Findings 18

Website Graphic Evaluation 43

Conclusions 49

Resources 50

Executive Summary

The '*ArlingtonMA.gov* ' and the '*ArlingtonMyRec.gov* ' websites contain a number of features that enable users with a wide spectrum of abilities the opportunity to access information about the Town of Arlington and the many programs, services and benefits offered through the website. Currently, they meet some applicable portions of the World Wide Web/Web Accessibility Initiative (W3C-WAI) Web Content Accessibility Guidelines (WCAG 2.0) and Section 508 of the Rehabilitation Act, but do not fully meet these web accessibility standards. The standards presented in Section 508 and the W3C/WAI's WCAG 2.0 provide the most robust set of guidance for a website that works well for users with the widest range of physical, sensory or cognitive abilities.

Requirements for non-discrimination in web information

The U.S. Department of Justice has clarified expectations that the websites of state and local governments are covered by ADA title II as well as under Section 504 for recipients of federal financial assistance. http://www.ada.gov/websites2.htm

Though the obligation is not ambiguous, the Department of Justice (DoJ) is expected to revise the regulations implementing ADA title II relative to the accessibility of web information and has sent them along in July of 2014 to the Office of Management and Budget, a final step before issuing them. DoJ is responding to the need for clarification in the face of inconsistent court decisions, differing standards for web accessibility, and calls by people with disabilities to end any misperceptions about the requirements.

Given the significance of web-based information for residents interacting with local government, web accessibility should also be viewed as an obligation to non-discrimination for state and local governments under the overarching responsibility to ensure "programmatic access" to people with disabilities and as a responsibility to provide "effective communication," a core administrative responsibility under both Section 504 and the ADA.

Web Content Accessibility Guidelines - WCAG 2.0

Web Content Accessibility Guidelines **(**WCAG 2.0) are the most commonly recognized standard for web accessibility globally. It is published and maintained by the **World Wide Web Consortium,** an international community where member organizations, a full-time staff, and the public work together to develop web standards. Led by web inventor Tim Berners-Lee and CEO Jeffrey Jaffe, W3C's mission is to lead the web to its full potential. The first design principle that guides W3C's work is: Web for All.

The social value of the web is that it enables human communication, commerce, and opportunities to share knowledge. One of W3C's primary goals is to make these benefits available to all people, whatever their hardware, software, network infrastructure, native language, culture, geographical location, or physical or mental ability.

Web Content Accessibility Guidelines (WCAG) 2.0 covers a wide range of recommendations for making web content more accessible. Following these guidelines will make content accessible to a wider range of people with disabilities, including people who are blind or low vision, deaf or hard of hearing, have learning disabilities, cognitive limitations, limited movement, speech disabilities, photosensitivity and combinations of these. Following these guidelines will also often make your web content more usable to users in general.

There is a global trend toward bringing the mix of guidance on web accessibility into agreement – "harmonization" - so that shared guidance will result in reliable and predictable accessibility across more nations.

Synopsis of ArlingtonMA.gov

Users with disabilities, including those with low or no vision, limited or no hearing, and physical /motor impairments will find that portions of the website are accessible but they will encounter difficulties with the usability or ease of use with certain aspects of the site. The Town of

Arlington also uses numerous external web-based service providers (e.g., Arlington public school; Arlington Request and answer center, Pay Your Bill Inline service) that are found to be partially inaccessible. The Town of Arlington could limit this problem in the future by including requirements for accessibility as a core requirement of the service provider and could mandate payment will be contingent on satisfactory performance for good accessibility. Overall, the comments were very positive - the site looks more visually appealing; the accessibility features are easily navigable; and users could execute most of tasks required during the testing.

Overview of Web Evaluation Process

The Institute for Human Centered Design (IHCD) conducted a review of the *ArlingtonMA.gov* and the *ArlingtonMyRec.gov* websites in order to identify any significant and recurring accessibility and usability problems. The basis for the review was under the guidance from Section 508 of the Rehabilitation Act, the W3C-WAI's WCAG 2.0 guidelines, and IHCD's expertise in universal or inclusive design. IHCD's review focused on central functions, key pages, and navigation throughout both of the websites.

Objectives

The objective of this website review was to learn how the experiences for the *ArlingtonMA.gov* and the *ArlingtonMyRec.gov* websites could be improved for all users, but specifically, for users that experience functional limitations such as low/no vision, cognitive limitations, and dexterity or other physical limitations.

Method of Evaluation

IHCD's primary research method is participatory research. This method focuses particularly on the engagement of 'user/experts,' or people with functional differences that vary from the norm who experience every day how design fails and who can help to provide guidance on solutions (Ostroff, 1997). The evaluation procedure for the websites involved using a variety of assistive-technology tools and methods such as screen readers, screen magnifiers, engaging with a variety of user/experts, and conducting an expert review. Additionally, the site was reviewed on a variety of platforms, different browsers, and operating systems.

IHCD used an array of methods to evaluate the website including:

- The use of the following automated evaluation and validation tools: A checker, WAVE Accessibility Toolbar.

- The testing of our own staff expert using manual testing techniques, including disabling Javascript, CSS, Contrast analyzer and other web applications on a page-by-page basis to assess accessibility.

Profile of User/Experts

The following table provides a brief profile of the four (4) user/experts that assisted with the *ArlingtonMa.gov* evaluation. Understanding how different users navigate through website with a range of abilities and assistive technologies helps to frame the significance of the identified issues and recommended solutions. One of the user/experts is a resident of Arlington and had some experience using the website in the past.

User/expert	Age	Functional Limitation	Individual characteristics for navigating websites
Emily	62	Fine motor skills, dexterity problems in hands due to Neurofibromatosis, Type 1; Also has ADD and some minor learning disabilities	Due to her dexterity impairment, she sometimes prefers navigating via keyboard or using the mouse, but has difficulties clicking on small target. Her ADD makes it hard for her to focus on a task for too long (especially when an action requires several steps to get somewhere) and she tends to not pay attention to the peripheral information and focus on the middle of the screen.
Ashley	19	Totally blind since birth, Primarily uses JAWS for Windows screen reader; Mac and iOS devices (iPhone) with VoiceOver screen reader	By using the TAB function, she navigates through links on the website. Also, she uses the search function extensively to get to specific information. Since she is adept with Apple technology, she has knowledge of web design and knows her way around most barriers encountered on the web. She considers herself to be a "technology enthusiast," and began using assistive technologies from an early age.
Rachel	36	Legally blind, primarily uses screen magnifier (ZoomText v.10.0.2) with Mac and IOS devices	Uses ZoomText for magnification and increased contrast through very low-level screen reading, He is very proficient with technology. Since he works for the City of Cambridge, he is very familiar with the city infrastructure and website challenges.
Vinod	59	Totally blind, lost sight at age 40, proficient user of Internet Explorer 10 with JAWS 15	Uses JAWS screen reader, prefers to understand the general layout of a website first, and then focus on the core content. He uses document markup to help navigate (e.g., Headings, Element Titles, etc.), and appreciates clear and simple layout of websites. He uses the web greatly for getting information.

Context of Use in the Test

Each user/expert was provided with a list of selected webpages to review. Then, they were asked to review the pages in the method that was most natural to them. Most of the participants accessed the website through their personal computers or work computers. The participants tested the website using different browsers (e.g., Internet Explorer 10, Safari, Mozilla Firefox, Chrome) and platforms (e.g., Windows and IOS). The participants used their own assistive technology including screen readers (e.g., VoiceOver, JAWS 14, NVDA) and screen magnifiers (Zoomtext & Safari built in zoom application).

Tasks

Then, the user/experts were given a set of tasks to perform in the website such as find information about services offered by the city, provide their feedback on portion of the site, subscribe to an event, and a few others. This made them focus on several key pages, noting their experiences with navigation and accessing specific types of features such as menus, forms, search fields and specific types of content such as linked documents. Each user/expert provided feedback on certain aspects of the website that worked well and those that did not work well for them according to their individual style of navigating and accessing content in websites.

Below is a list of the general questions that were presented to each of the user/experts. Follow-up questions were provided in response to specific issues or challenges that users individually encountered during their individual review.

Participant General Questions

- If you are using an assistive device, what type are you using?
- What was your experience navigating through the various links and pages on the website?
- Were you able to access any interactive features such as search or forms?
- Were you able to access any content in video or image format?

- What did you like about the layout of the website?
- What did you not like about the layout of the website?
- What are your recommendations for improving the website?
- Were you able to locate general information about accessibility for the Town of Arlington?

Expert Review Tools

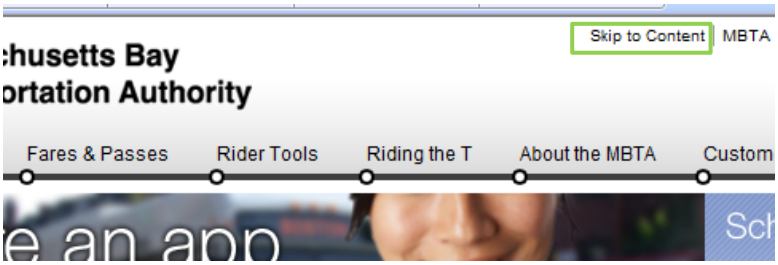
For the expert review, IHCD staff primarily used screen reader software (e.g., JAWS and VoiceOver), screen magnifier software (e.g., Zoom), along with a variety of online tools to check the accessibility of the website. These were used, in some cases, to try and re-create issues that the user/experts encountered in navigating through the website.

Experiment Design

Aside from providing a list of which parts of the website to access and a general set of post-review questions, user/experts were not provided specific instructions. This was done in an effort to ensure that the feedback obtained would be based on each user's natural navigation pattern.

Review of Findings

Use "Skip Navigation to Content" links effectively: "Skip Navigation Links" provide a standard method to allow users to bypass lengthy navigation links and access core content. Many accessible websites are able to incorporate an invisible or visible 'skip navigation to main content' link so that a screen reader user can quickly access the main content of the page. On *ArlingtonMA.gov* homepage, there is a "skip to main content" link, but the anchor for the link does not exist. Each page should have one Skip Navigation Link and that link should be located as close as possible to the main header of the web page. Also, it would be beneficial to have visible Skip Navigation Links because even users who navigate using keyboard-only access (tabbing through) would find this feature useful. Below is an example of a website with a visible Skip Navigation Link.



Example of a website with a visible 'Skip Navigation to Content Link'.

Use of appropriate headings: Headings are present on *ArlingtonMA.gov*, but not always in a logical order. On most pages, the Header 1 was inaccurate and empty headers were discovered. While the primary purpose of headers are to denote section breaks in webpages, screen readers and other assistive technology users have the ability to navigate web pages by structure. This means that the user can read or jump directly to top level elements heading level 1(<h1>), next level elements heading level 2 (<h2>), third level elements heading level 3 (<h3>), and more. Viewing or listening to this outline would provide a good idea of the content and structure of the page very similarly to how a sighted user would visually scan an outline. A number of the user/experts commented that navigation work better on websites where a heading structure was provided.

Use form labels to appropriately correspond with input fields: Users with disabilities, especially those who are blind or visually impaired, need to know the purpose of a specific form control and how to interact with it. Numerous forms such as <input>, <select>, or <textarea> did not have corresponding labels. Please note that labels are not required for image, submit, reset, button, or hidden form element types. Markups should properly associate a *form label* with the input element. If a user comes to an area where they have to enter information, then it should be labeled correctly as to what information they are being asked for so the user knows. Without properly labeled forms, it is confusing and unclear. Users can get disorganized, confused, or just get frustrated by the labels not being clear. The form label is accepted by a variety of assistive technologies and useful whether the user is navigating using keyboard shortcuts, tabbing through or filling out forms with assistive technology such as JAWS. An example of the label markup is below.

```
<label for="name">Name:</label>
<input id="name" type="text" name="textfield" />
```

Label all images with descriptive information: All images should have associated alternative text. In instances where the image is not significant to understanding the content of the page (decorative image) it is acceptable to enter a null Alternative Text. On *ArlingtonMA.gov*, most of the images are labeled with alternative text, but sometimes lack descriptive information. On *Arlingtonrec.com* almost all images lack alternative text. Find details about how to provide adequate alternative text here: http://webaim.org/techniques/alttext/

Use appropriate font sizes: Make sure font sizes can be increased independently of the styling on a webpage, and the default text is *at least* 9-10 points/pixels high. A size of 12-14 points/pixels for body is generally recommended for body text (depending on audience). The WCAG Guidelines recommends text can be zoomed to 200 percent. Use relative font sizes to ensure the text can scale. See guidance from WCAG 2.0 1.3.4 regarding text sizing http://www.w3.org/TR/WCAG20/#content-structure-separation

Provide enough contrast throughout the website: Make sure to provide sufficient color contrast for text throughout the entire website. The WCAG 2.0. Guidelines require a contrast ratio of at least 4.5:1 for small text and at least 3:1 for bigger text. This is a good tool to check the color contrast when developing your page http://webaim.org/resources/contrastchecker/

Use a consistent and layout throughout the website: Use a consistent layout for all the pages, and make sure there are elements that the user can rely on for the entire navigation (e.g., footers are consistent across all pages, search boxes and menus are always on the same pages). As recommended by WCAG Guideline 3.2, ensuring repeated components occur in the same order on each page of a site helps users become comfortable that they will be able to know where to find things on each page. This will ease considerably the experience of users with cognitive disabilities as well as older users and user that visit the site for the first time. More information can be found here: http://www.w3.org/WAI/GL/UNDERSTANDING-WCAG20/consistent-behavior-consistent-locations.html

Ensure documents offered on the website (e.g., PDF, Word document) are accessible: Every document on the website in a PDF format should be accessible to screen reader users and users with low vision. If the PDF has a form fillable, make sure to create an accessible fillable PDF. Adobe Acrobat provides many easy tools to include accessibility features into your document and make them conform to section 508 and WCAG 2.0. Guidelines. See this link for more detailed information: http://help.adobe.com/en_US/acrobat/using/WS58a04a822e3e50102bd615109794195ff-7d10.w.html

Identify a logical tab order: Ensure that all content can be accessed with the keyboard alone. For the most part, web developers do not need to worry about specifying the tab order of the elements on their webpages. Well-designed pages and/or tables usually have a built-in logical tab order. At times, a webpage, especially one with forms, can benefit by assigning the tab

order to form controls and/or links. To specify the tab order of an element, add a tabindex attribute to the tag. For example, tabindex="1", tabindex="2", etc.

Review of Findings (*Note: for Arlingtonrec.com only*)

Use CSS styling instead of tables to visually layout blocks of related content: Tables should be used only for organizing data in rows and columns. Use CSS styling, instead of tables and nested tables to visually lay out blocks of related content for graphical rendering. The use of tables for the layout of the menu and several graphical element-like forms is not recommended and will considerably slow down the navigation for the user with no vision using a screen reader.

Ensure that multi-media and dynamic content are accessible: Ensure multi-media elements such as video and dynamic content are accessible and that accessibility features such as closed captioning and audio description are available and working. Media players that are embedded in a website should be accessible; the *controls should be operable by keyboard-only access and screen readers*. Media content whether audio or video should not load automatically when a user reaches a webpage. Flash content is generally not accessible so provide alternate means for users to access this content.

General Comments

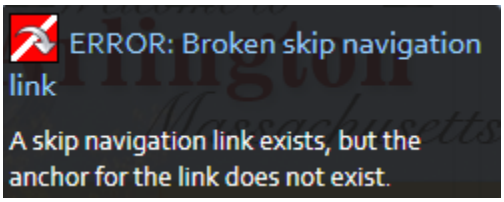
Use simple vocabulary: Use simple vocabulary that users are familiar and comfortable with on the website. For example, users had some challenges with city-specific terminology. We found that users were looking for easy search headings such as “Contact Us,” “FAQs,” “Where Do I Vote,” and “About Arlington.”

Provide an accessible navigation menu: The main navigation menu is not keyboard accessible. For example, it only worked for VoiceOver screenreader users, but not Jaws screenreader users. Additionally, the dropdown menu was challenging to use for the user with dexterity impairment and user with low vision that can only see a portion of the screen at a time. It is hard to reach for items far from the top-level button when using a mouse, most users experienced frustration trying to navigate it.

Make sure that the dropdown-menu can be accessed by keyboard-only user. Below are some examples of menu that works well for keyboard and screen readers:

- http://terrillthompson.com/tests/menus/accessible-mega-menu/test.html
- http://www.newenglandada.org

Fix broken skip to navigation link: A skip to navigation link exists, but the Anchor for the link is not present, it should be placed at the beginning of the main content on every page, after all the navigation links.

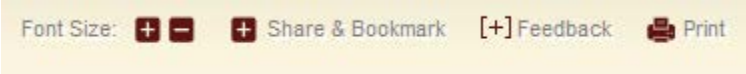


Ensure usable Search Box: The "Go" button should be labeled either "Go" or "Launch Search." Currently, it says, "Search graphic link." In our review, the search box was used consistently by the users and they tended to go there first when trying to find something on the website. Also, the users really like the "I want to" function because it allowed them to find things on the website more easily.

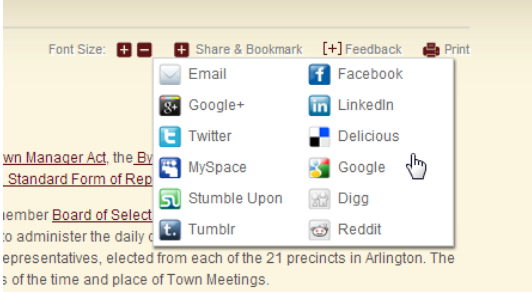
Font Size/Print/Share & Bookmark links: For both screen readers and keyboard-only users, these links are in the way. For example, they have to get over those links in order to reach the main content of every webpage they navigate. One suggestion would be to put the links at the bottom of the page or if you wish to keep the design as it is use the TAB index to make sure they are not read systematically before the main content of the page.

One other option would be to organize the content using headings; heading one would be the title of the page, headings 2 for subtitle on the main content and heading 3 or 4 for those links

Additionally, the contrast is too low on the text.

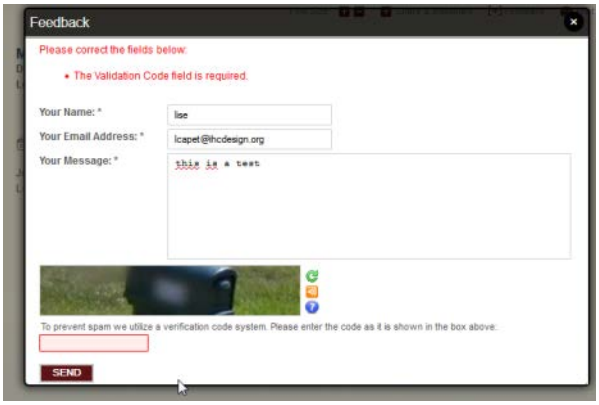


When increasing the font size, the font link did not increase in size so the user was unsure whether the font of the text increased.



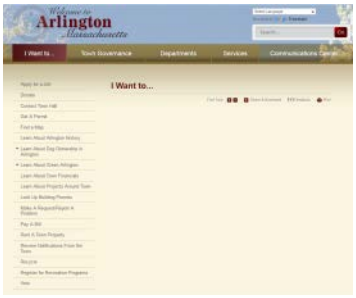
When using screen readers some users (using Mac /Chrome/Voice Over) had to read every single item of the “share” list before getting to the content. One more reason to make sure those are organized after the content.

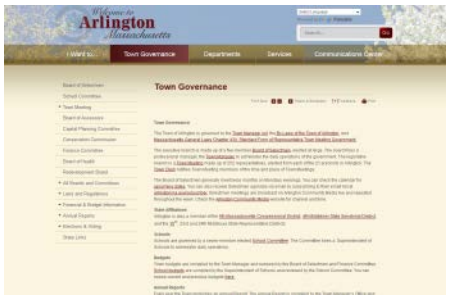
Avoid using the CAPCHA code – Feedback Section: For accessibility purposes, avoid using the CAPCHA code when possible. In the feedback section, there is a designated CAPCHA code. The error message appearing on the in red from the image below was not heard when using a screen reader.



In the image above we tried to submit a feedback but the image offered by CAPCHA came with no number on it.

Ensure consistency in the Left-Hand Menu: Consistency helps users with cognitive limitations along with people who are not as technology savvy orient themselves and feel comfortable with a website. In our review, we discovered some pages have a left-hand menu with no content while other pages have no left-hand menu at all. As a general rule of thumb, keep all the elements on a webpage consistent throughout the website.



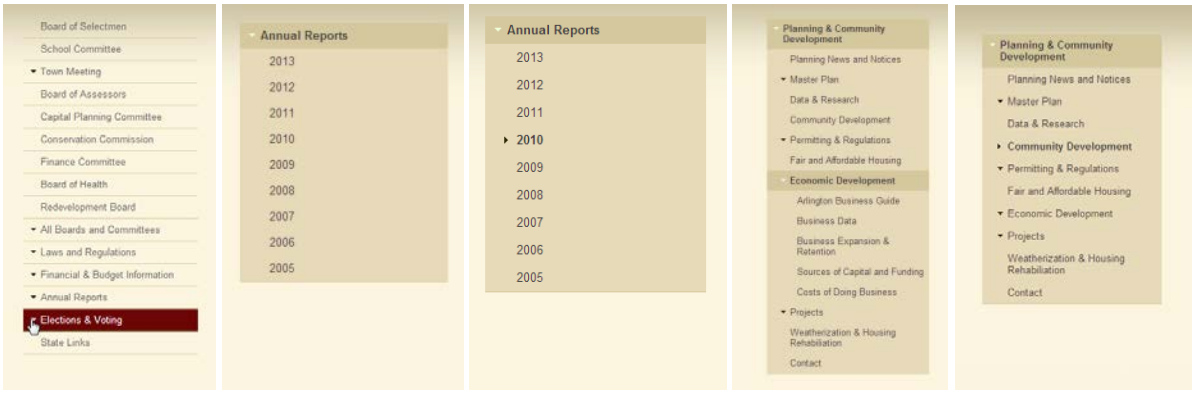


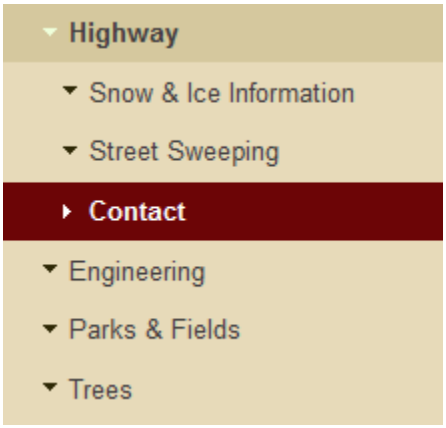
Another finding noted was that the users did not understand the meaning of the arrows. For example, one user mentioned that arrows pointing right usually refer to opening a subfolder (like the windows folder explorer system that people are familiar with).

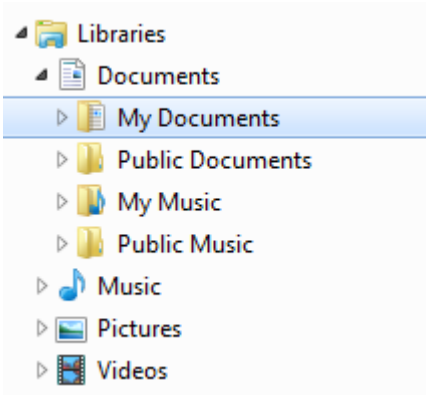
In *ArlingtonMa.gov*, the arrow pointing right means “you are here” and the arrow pointing down means you are opening a subfolder. Moreover, the arrows do not appear for screen reader users.

Using an additional differentiation in the menu to show the user where he is would make the navigation easier, for instance bolding the menu item you are in on the list, or using a different background color for this item.

By using an additional differentiation in the left-hand menu, it would allow for easier in navigation.







Page-by-Page Findings

ArlingtonMA.gov

Home Page: ArlingtonMA6/home

Apply for a Job: ArlingtonMA6/departments/human-resources/employment-opportunities

Pay a Bill: ArlingtonMA6/departments/treasurer/online-bill-pay

Calendar: hArlingtonMA6/communications-center/calendar

Where to vote: ArlingtonMA6/town-governance/elections/polling-locations

Application > Dog license: ArlingtonMA6/services/applications-regulations-permits

News: ArlingtonMA6/communications-center/news

Contact Us: ArlingtonMA6/departments/recreation/contact/-alpha-R

Request/Answer Center: ArlingtonMA6/services/request-answer-center

Annual Report PDF: ArlingtonMA6/home/showdocument?id=13068

Third Party

Sign up for Alert

Request & Answer Center

Public School: http://www.arlington.k12.ma.us/home/

ArlingtonRec.com

Home page: http://arlingtonrec.com/info/

Create an account: https://www.arlingtonrec.com/info/household/account_check.aspx

Watch the video: https://www.youtube.com/embed/M0n4z9WUpgc?rel=0&autoplay=1

How to register: https://www.arlingtonrec.com/info/tutorial/

Navigate the calendar: https://www.arlingtonrec.com/info/calendar/default.aspx?r=0

Spring summer program guide PDF:

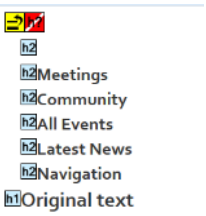
arlingtonrec.com/forms/5802_arlingtorecreation_program_springsummer20141.pdf

Home Page Findings

Icons: The icons had no Alt text at the time we first we conducting our review. This issue has now been resolved. The color contrast could be increased for the gold and white version; however, the contrast on the highlighted white on red version is good.

Additionally, the icons turned red when hovering over them with the mouse. Ideally, the same thing should happen when using the keyboard. For that, you can use the ONfocus in addition to the On Hover.

Headings: The heading order is incorrect There is an empty headings “h2” = …
The heading 1 is “original text”. It should be the page title (e.g., Clerk’s office).



Rotating images/carrousel: The control should be read before the image and content, there is two way to achieve this:

- Ideally place the controls above the text and title
- Use *Tabindex* to reorganize the order in which information is read for keyboard-only or screen reader users if you do not which to change the visual aspect of the page

Allow more time to read the content. There is no appropriate Alt Text on the control button they are read “1” ”2” ”3” with no mention to the function of those control button. Prefer something like “news element 1” “news element 2” etc. or something relating to the content of each news element such as “Make an impact” or “fire station”

Calendar: Three links “more community,” “more events,” and “more meetings” land on the same calendar. The page title of the page you are redirected too remain “calendar” it was confusing to the user” eventhough there were a series of different calendars on the website. This issue was fixed prior launch

Additionally, the name of the month is not showing up. This was a barrier for the screen reader user because he did not know which month they were looking at on the webpage. One suggestion would be to make the name of the month a Header.

Our findings suggest users prefer the full name of the month, rather than the abbreviation, "JUL"

Abbreviations are hard to understand especially for non-native English speakers and users navigating the page with a screen reader

This calendar does not read the month to the screen reader

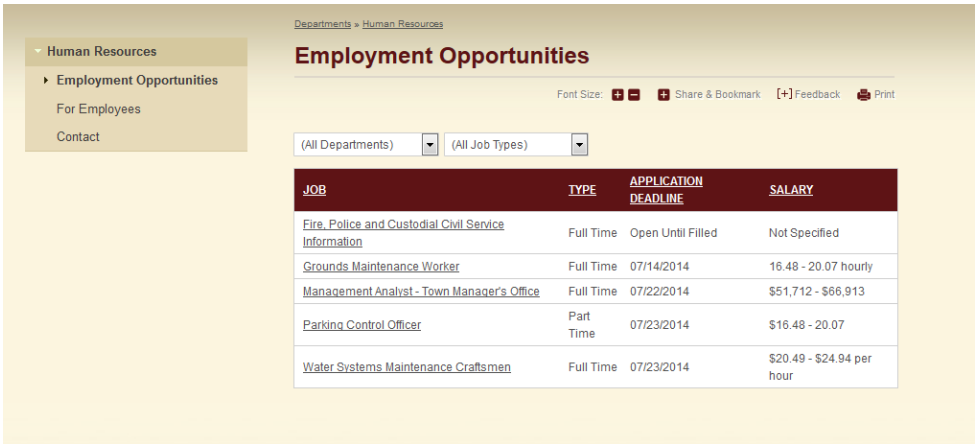
The information for each day is not read to screen reader

Footer: The users could not understand what the general phone number in the footer was for. According to the users, they prefer a "Contact Us" link. Additionally, when you click on the phone number link, you are redirected here: http://dev6.netvip.com/ArlingtonMA6/town-governance

Another finding is that for screen reader users between each item in the footer, the user reads "Bullet." In order to ensure accessibility for all users, replace those images with "null" alternative text so they **are not** identified as text element.

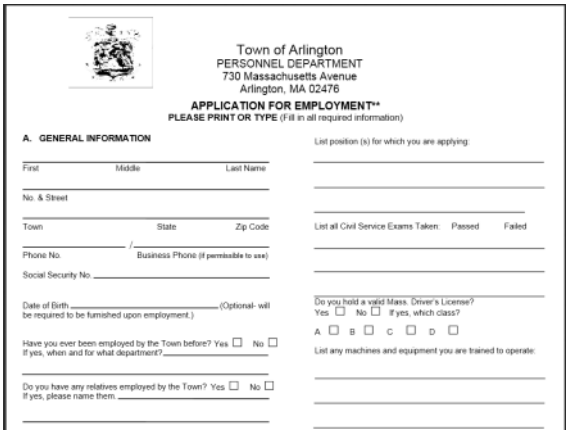
Apply for a Job

ArlingtonMA6/departments/human-resources/employment-opportunities



In general, the users found the "Apply for a Job" page easily. They were able to access the content of the whole page using a keyboard-only. One challenge was it was difficult to find the *employment application* from the "Job Offer" page. Ideally, add a link on the "Job Offer" page to the employment application.

Employment application: In order to ensure accessibility make sure the employment application is an accessible PDF, accessible Word document or a web form. The employment application document is readable, but cannot be filled by someone with low vision or no vision. Additionally, the user users could not identify where they needed to email the application. Users with low or no vision said they usually prefer to use an accessible online form rather than having to download, fill and then email a document



Town of Arlington
PERSONNEL DEPARTMENT
730 Massachusetts Avenue
Arlington, MA 02476

APPLICATION FOR EMPLOYMENT**
PLEASE PRINT OR TYPE (Fill in all required information)

A. GENERAL INFORMATION

First Middle Last Name

No. & Street

Town State Zip Code

Phone No. Business Phone (if permissible to use)

Social Security No.

Date of Birth (Optional- will be required to be furnished upon employment.)

Have you ever been employed by the Town before? Yes ☐ No ☐
If yes, when and for what department?

Do you have any relatives employed by the Town? Yes ☐ No ☐
If yes, please name them

List position (s) for which you are applying:

List all Civil Service Exams Taken: Passed Failed

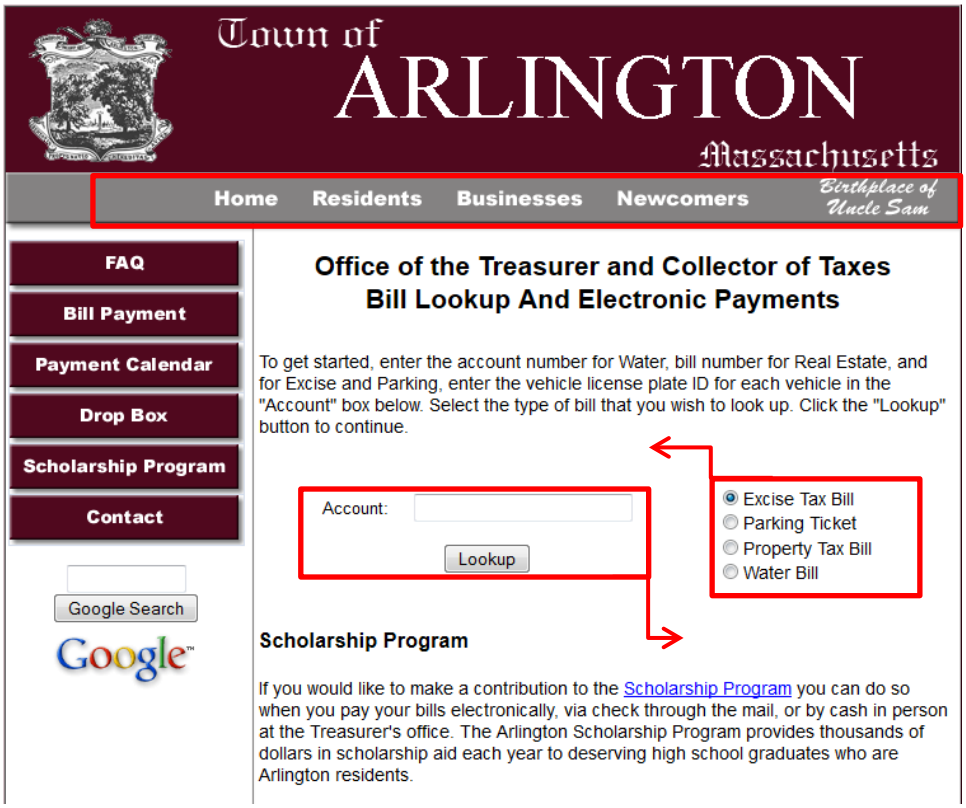
Do you hold a valid Mass. Driver's License?
Yes ☐ No ☐ If yes, which class?
A ☐ B ☐ C ☐ D ☐

List any machines and equipment you are trained to operate:

Users said that their preferred way to apply for a job would be to have access to an online form on the website. If it is decided to not have an online application, we recommend providing information on the steps to take to apply for one of the listed job.

Pay a Bill

ArlingtonMA6/departments/treasurer/online-bill-pay



In general, users were confused by the remarkably different layout of the webpage and expressed how sensitive they are when they need to make a payment *online*. They want to be sure they are on the correct webpage.

Use Tab Index to reorder the elements on this page to make sure they are read in the right order. When using the keyboard or a screen reader you will get to the "Account" field then arrive on the "Lookup" button before knowing there are Radio Buttons to fill in. Move the Radio button Above the "Account" field or on the left of the "account" field.

The gray menu on the top of the page was not readable for the user with low vision. This issue has been resolved now by the use of Iframe.

The contrast is low and the title appears “blurry” when the screen is magnified.

Users were confused about why the big “Google” image appears on this page

Currently the “pay a bill” link goes to this page:

Change of Address form: This form is not accessible. Ensure accessibility by opting for a fillable PDF online form or Word document.

A user navigating with a screen reader will have every single “_” character read to him as “underline” never use characters for graphic formatting.

Town of Arlington

REAL ESTATE/WATER
CHANGE OF ADDRESS AND/ OR OWNER FORM

Please complete the information below, IN FULL, if you are requesting a change of information as it appears on your tax bill.

1. Old Owner(s) (Print)_____
2. Property Address
(Print)_____
3. Bill Number(s)_____
Please include the Bill Number of each parcel of property you want changed
4. New Owner(s) (Print)_____
First Name Last Name
5. Mailing Address of Owner(s)
(Print)_____
If different from property address
7. Date of Sale _____
6. Signature_____ Tel. No._____
Owner of Record Only

Mail To:

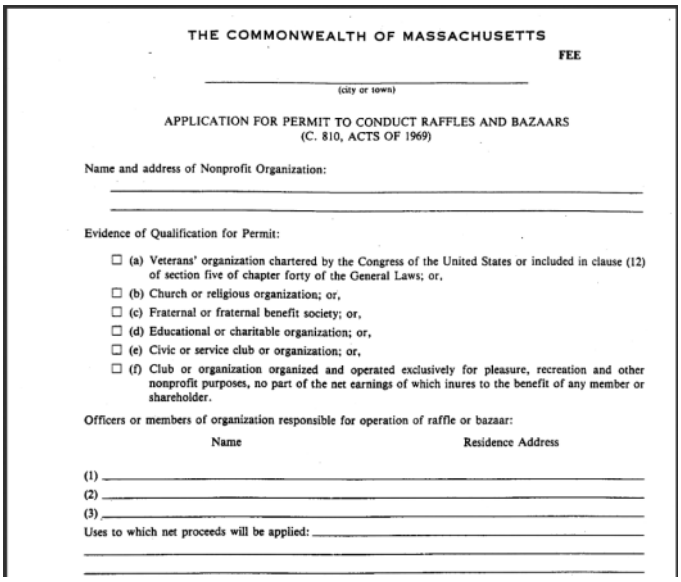
Office of the Tax Collector
Town of Arlington
P. O. Box 210
Arlington, MA 02476

Office hours: Monday – Wednesday 8A.M. to 4P.M., Thursday 8A.M. to 7P.M., Friday 8A.M. to NOON

Apply for a Permit Form

http://dev6.netvip.com/ArlingtonMA6/departments/clerks-office/clerk-forms

This form is completely inaccessible and cannot be read or filled out by someone using a screen reader. Make sure to use fillable PDF online forms and Word documents.



THE COMMONWEALTH OF MASSACHUSETTS

FEE

_____
(city or town)

APPLICATION FOR PERMIT TO CONDUCT RAFFLES AND BAZAARS
(C. 810, ACTS OF 1969)

Name and address of Nonprofit Organization:

_____

_____

Evidence of Qualification for Permit:

☐ (a) Veterans' organization chartered by the Congress of the United States or included in clause (12) of section five of chapter forty of the General Laws; or,

☐ (b) Church or religious organization; or,

☐ (c) Fraternal or fraternal benefit society; or,

☐ (d) Educational or charitable organization; or,

☐ (e) Civic or service club or organization; or,

☐ (f) Club or organization organized and operated exclusively for pleasure, recreation and other nonprofit purposes, no part of the net earnings of which inures to the benefit of any member or shareholder.

Officers or members of organization responsible for operation of raffle or bazaar:

Name Residence Address

(1) _____

(2) _____

(3) _____

Uses to which net proceeds will be applied: _____

_____

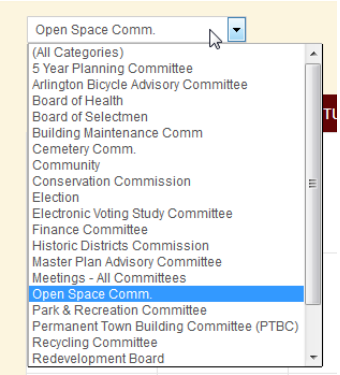
_____

Calendar

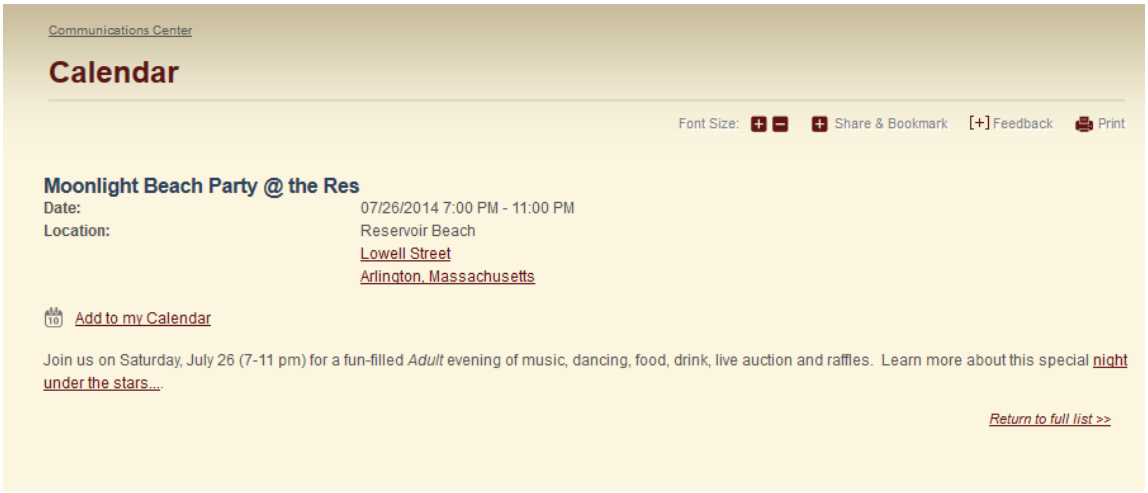
ArlingtonMA6/communications-center/calendar

In order to help bring clarity to the different calendars, one suggestion is to have three buttons (community/meetings/all events) be included on the main calendar. It is important to note the user had trouble understanding the vocabulary within the calendar. Review the items in the dropdown to make them more obvious to users using simple words and phrases such as “Arts Event,” or “Farmers Market.” Some terms are hard to understand for users not familiar with the town organization, for instance, “open space comm.”

Dropdown menu: To help with accessibility, it is recommended to keep a dropdown menu list down to a maximum of 12 items. In order to narrow down the events, perhaps use two dropdown menus instead of one.

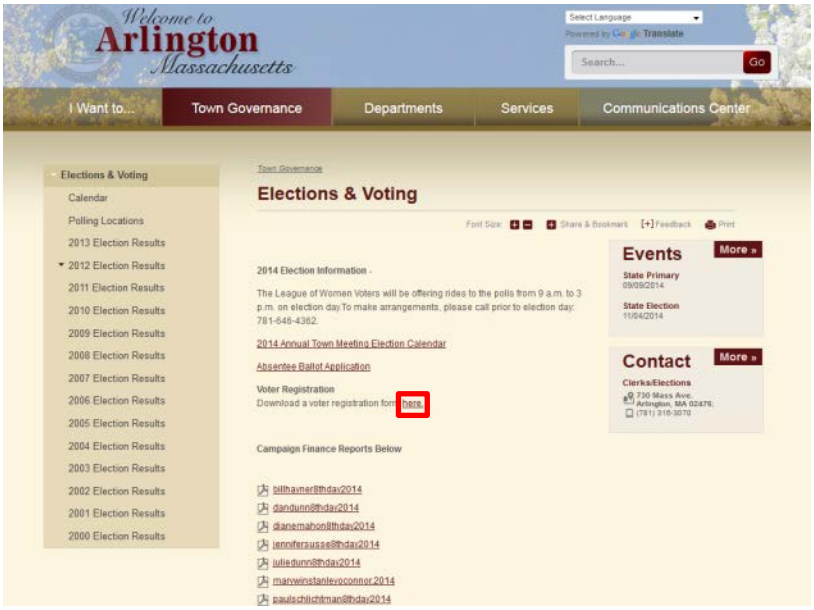


The distance between the “Date””Location” and the info make it hard to read, maybe justify all the text left to ease the legibility.



Where to Vote

ArlingtonMA6/town-governance/elections/polling-locations



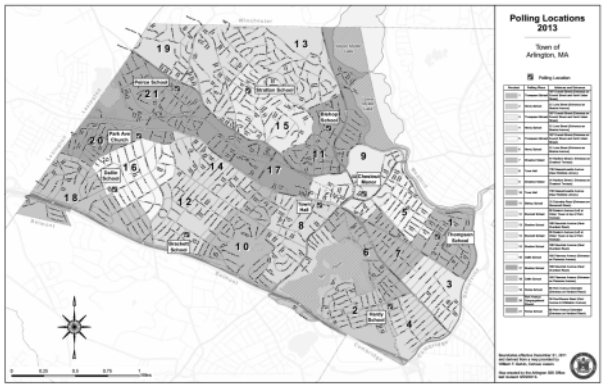
We found that none of the users could find the information about polling location on the left-hand menu. Most users were not familiar with the term “Polling Location” and would prefer something like “Where to Vote.”

Another finding is the link to download the “Voter Registration” is broken. Also, naming the link “Here” is not accessible because the user could not identify the link within the content when pulling out a list of links for the page.

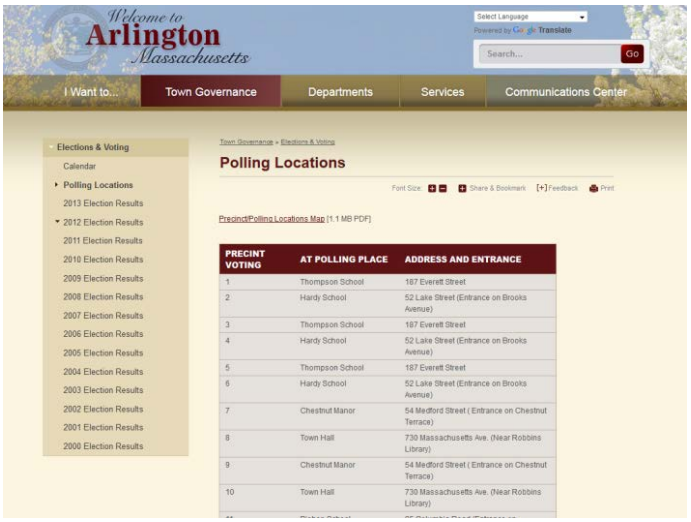
There is no accessible way to determine where to vote since you have to know what your Ward is and the map is inaccessible.

The menu for “Past Election Results” is very long and extensive and the users have to go through this before accessing the main content. It could be reduced by using a link with the results from 2013 to 2000. One easy solution would be to move link from 2012 to 2000 in a sub navigation folder named “2013-2000”

None of the users (with or without vision) were able to navigate the map comfortably and could not locate their ward. One user commented, “This map is not intuitive for me.” While another user said, “If it was like a real map - Like a Google Map.”

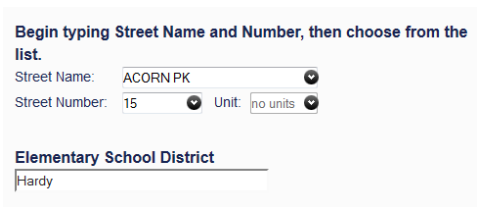


The map was hard to navigate for all users and it is conveying information by color only. Above is an example of how the map would look like for users with Achromatopsy.



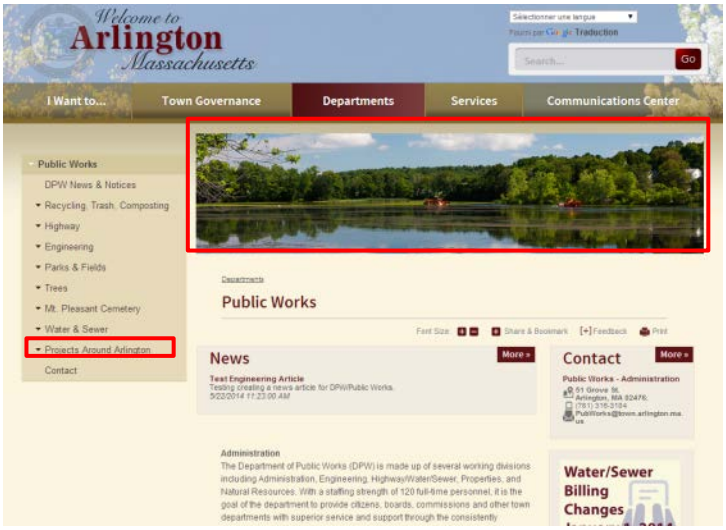
We recommend using a street locator, like the type used for on the Arlington Public School Website, which was tested and worked well with users:

http://www.arlington.k12.ma.us/administration/schoolregistration/schoollocator.asp



Public Works

http://dev6.netvip.com/ArlingtonMA6/departments/public-works

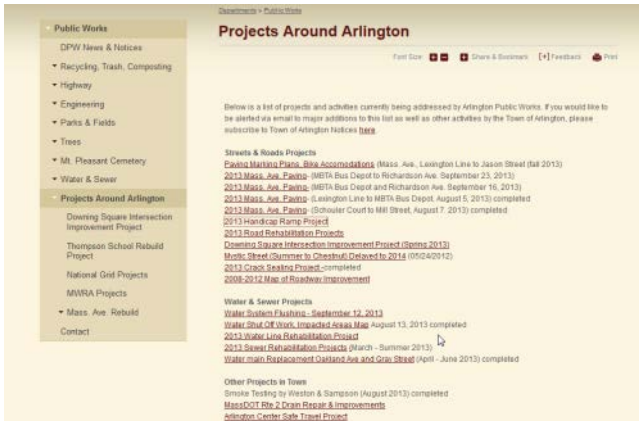


The Alt text on the banner image does not describe the picture. It appears the *title* of the image is what the correct alternate text should be.

The Alt text does not match the image/function. It should say “Click here for details about Water/Sewer billing changes January 1, 2014.”

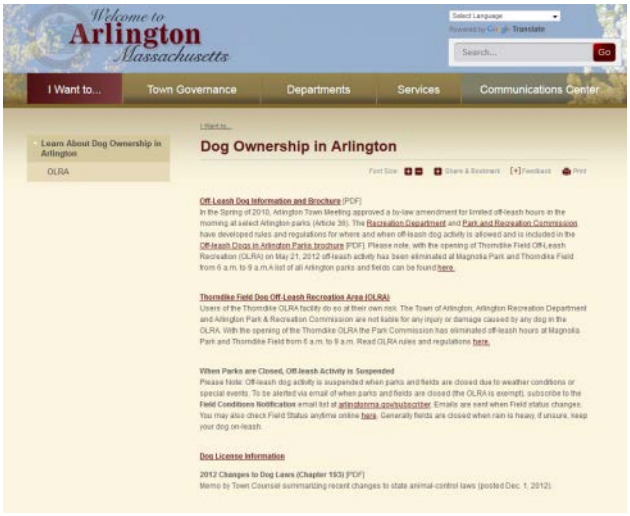
Some users found it difficult finding information about Mass Ave. construction. Users did not see the “projects around Arlington” link immediately. It appears users are focusing on the main content rather than the left-hand menu. Therefore, users are likely to miss a lot of information. When looking for the latest update for Mass Ave works, user looked at the “project around Arlington main page,” but that information is not as up-to-date as the info under “Mass Ave rebuild.”

For easier navigation make the subtitle “Street & Roads project,” “Water & Sewer Projects” a header level 2

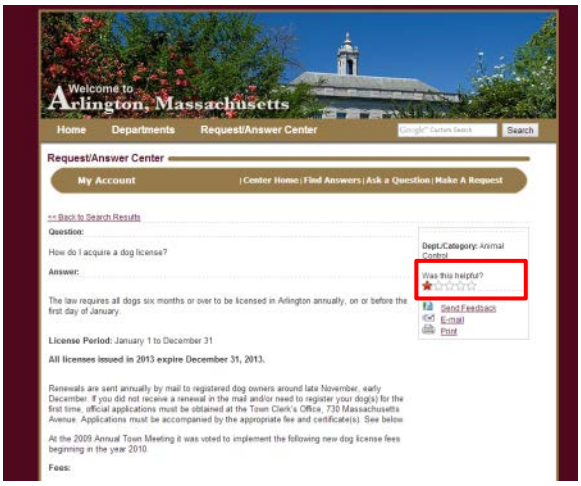


Application > Dog license

ArlingtonMA6/services/applications-regulations-permits



Our review found no useful information about Dog License information when clicking on the "Dog License Info" link.

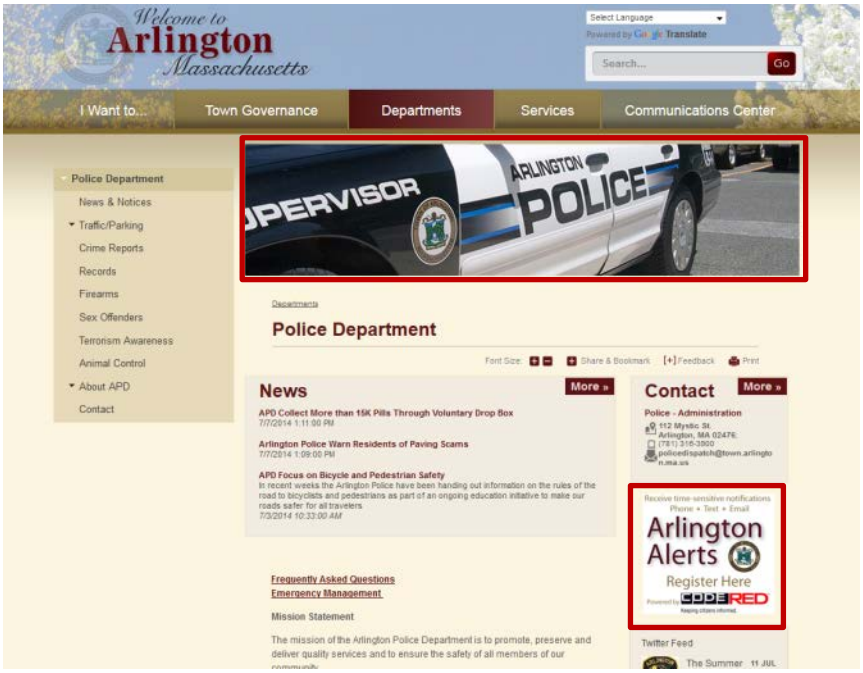


Another finding from our review found the sample dog license to be completely inaccessible, the "was this helpful" function on the page above is not accessible for User using screen reader only.

Additionally, the actual dog license form was very difficult to find (it is not under the "Applications, Regulations & Permits" link but under clerk's office > Clerk form).

Police Department

ArlingtonMA6/departments/police-department

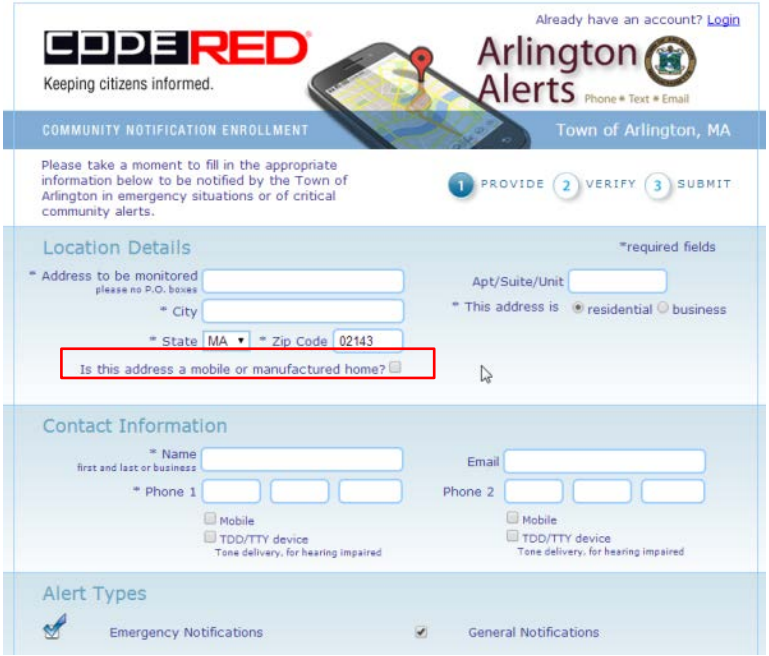


The Alt text on the banner is incorrect. It reads “Police-2604””Police-2608,” which does not accurately describe what the picture is.

Additionally, the Alt text on “Arlington Alert” button is not accurate. It should say something like “Register here to receive time-sensitive notification for Arlington by phone text or email.” This issue has been addressed prior launch.

Sign up for Alert

http://cne.coderedweb.com/Default.aspx?groupid=510b8x%2fpD%2bUmdNxkp8aU4Q%3d%3d



Another finding in our review is inaccurate labeling on the checkbox that appear as “Is this address a mobile or manufactured home” for the screenreader User it read “contact checkbox.”

The content provided for the “continue button” to someone using a Screen reader is “Ctl00$content$btncontinuebuttononmouseover”

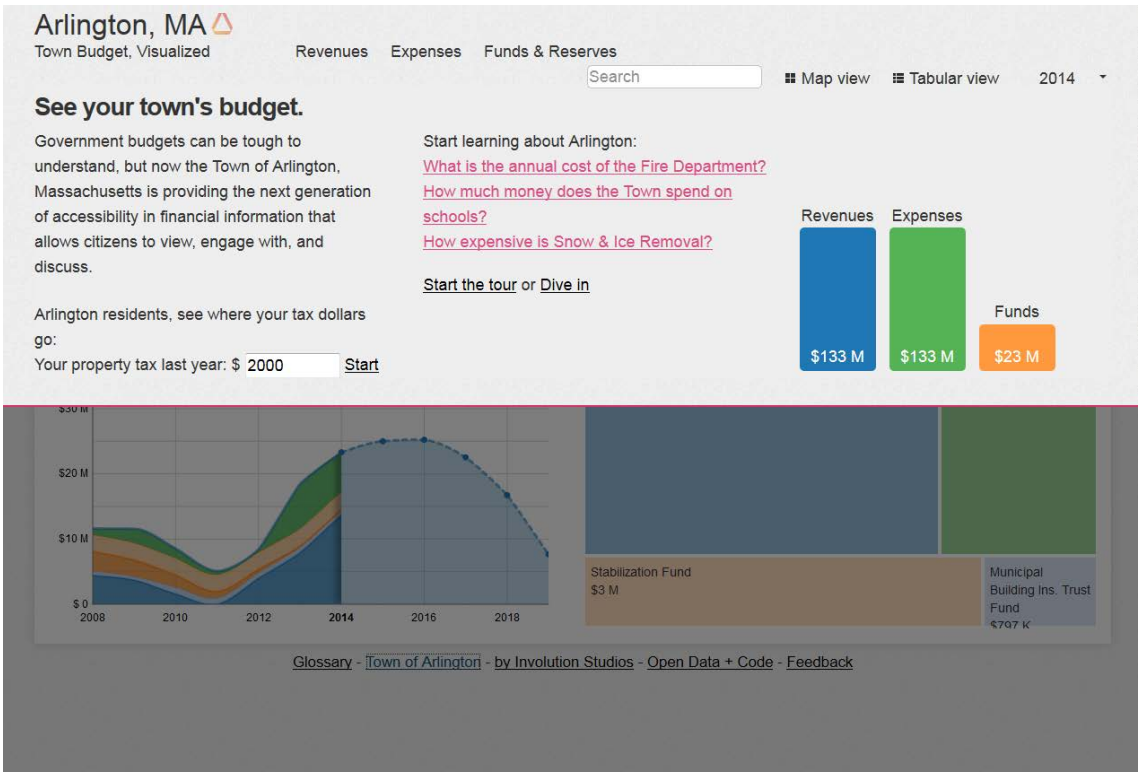
Image buttons provide important functionality that must be presented in alternative text. Without alternative text, the function of an image button is not made available to screen reader users or when images are disabled or unavailable.

Arlington Visual Budget

Page : http://dev6.netvip.com/ArlingtonMA6/town-governance/financial-budget-information

Image button with no adequate alt text

```
<img style="float: right; border-width: 0px; border-
style: solid; margin-top: 1px;
" alt="AVB_LogoSquare" src="/ArlingtonMA6
/Home/ShowImage?id=316&t=635236656997170000">
```



The links on this page http://www.arlingtonvisualbudget.org/ were not accessible for users using keyboard only. But this is probably a third party website on which the town of Arlington has little control.

News

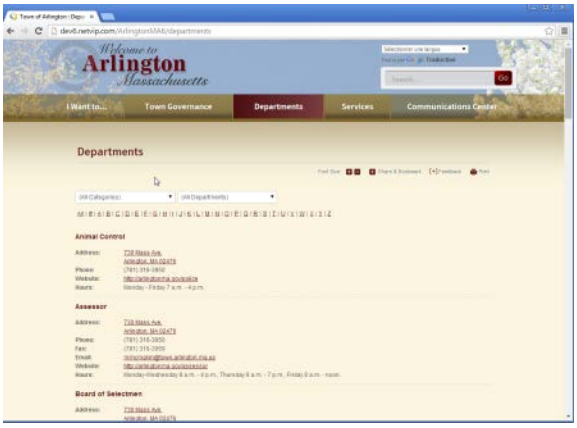
[ArlingtonMA6/communications-center/news]

Users were able to access all the content easily in this section.

The one issue that did come up on this page had to do with an image's alternative text. The alt. text repeats the link name when it should describe the picture.

Contact Us

ArlingtonMA6/departments/recreation/contact/-alpha-R

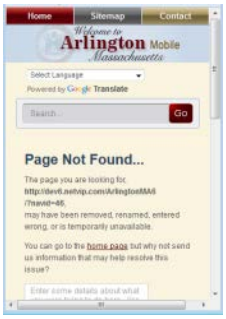


We found the users were looking for a "Contact Us" link. There was no obvious location that lists the Town Hall *hours of operation* and provides a general *phone number*. Perhaps, the top of the Department page can include a main phone number, the Town Hall address, and hours of operation.

It is important to mention, there is a general phone number in the footer, but users could not understand what it was associated with on the webpage. When you click on the phone number link you are redirected to this page: http://dev6.netvip.com/ArlingtonMA6/town-governance

We recommend having a “Contact Us” link under the “Communication Center” as well as under “I want to ..”

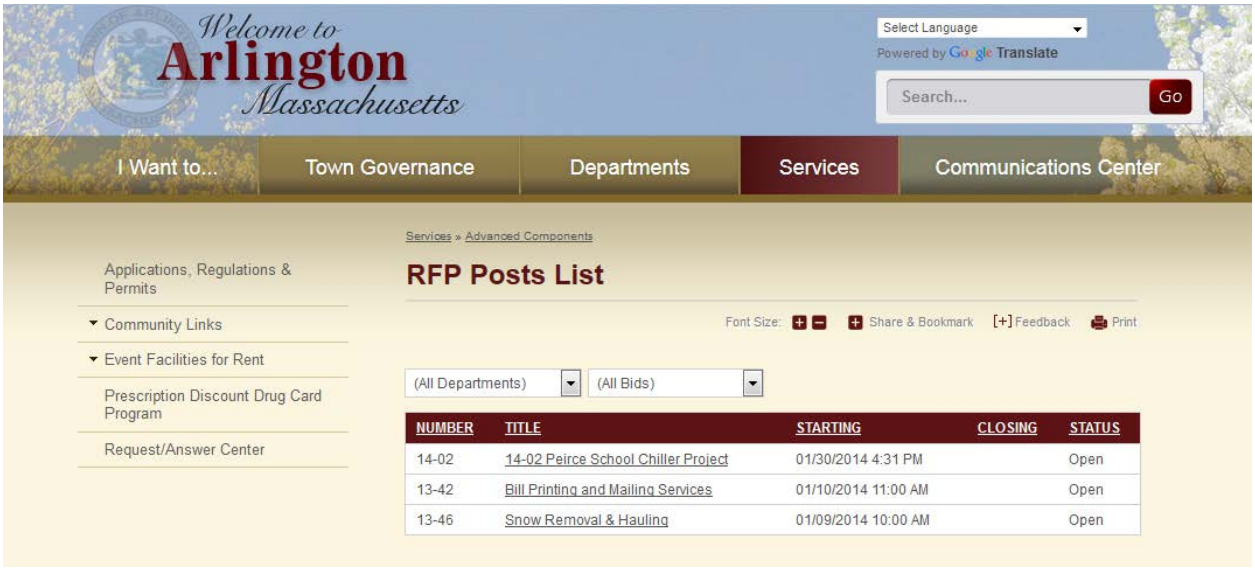
On the mobile version of the site, the “Contact Us” does not link to anything.



Bid RFP’s List

http://dev6.netvip.com/ArlingtonMA6/services/advanced-components/rfp-posts-list

We got to this page using a link in the footer; however, there does not seem to be any correlation between that page and the left-hand side menu. Also, it was hard to understand what “Advanced Opponent” stands for.



Request/Answer Center

ArlingtonMA6/services/request-answer-center

The error message above was hard to find when using a screen reader.

Another recommendation for this page is to use CSS to organize the page instead of a table. The table made navigation very challenging.

Additionally, try to avoid links that do not make sense out of context:

> For complete rules and regulations regarding parking in Arlington please go here.

The use of a frame makes the navigation difficult. You only see a part of the screen, but there is no scrolling bar to navigate within the screen.

Another important finding is the contrast on buttons. It is very low making it difficult for the user with low vision to read.

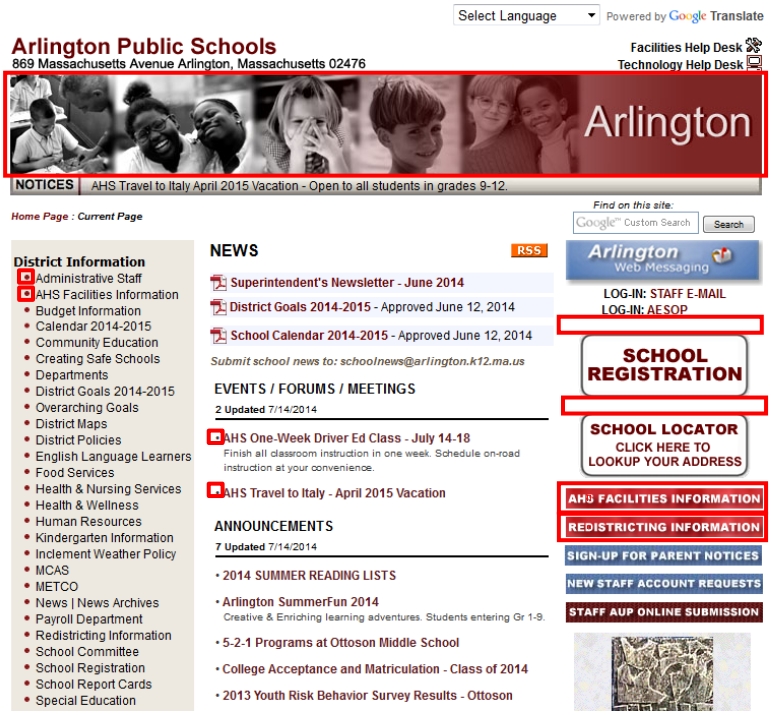
Post Launch Evaluation:

The website has been updated with a Frame and the information from the Answer/Request Center is now blended in the website. This makes the navigation easier for users with cognitive impairments and low vision users. However, we noticed that the frame used is creating issues with some of the screen reader technologies. When using NVDA screen reader it seems to work correctly, but when navigating using JAWS screen reader, the links on the page are not read.

Since this section of the website was developed after IHCD evaluation, an in-depth evaluation of this would require the involvement of User/Experts and consist in an additional scope of work.
A possibility is that the incompatibility with JAWS screen reader is coming from the JavaScript used.

School Department

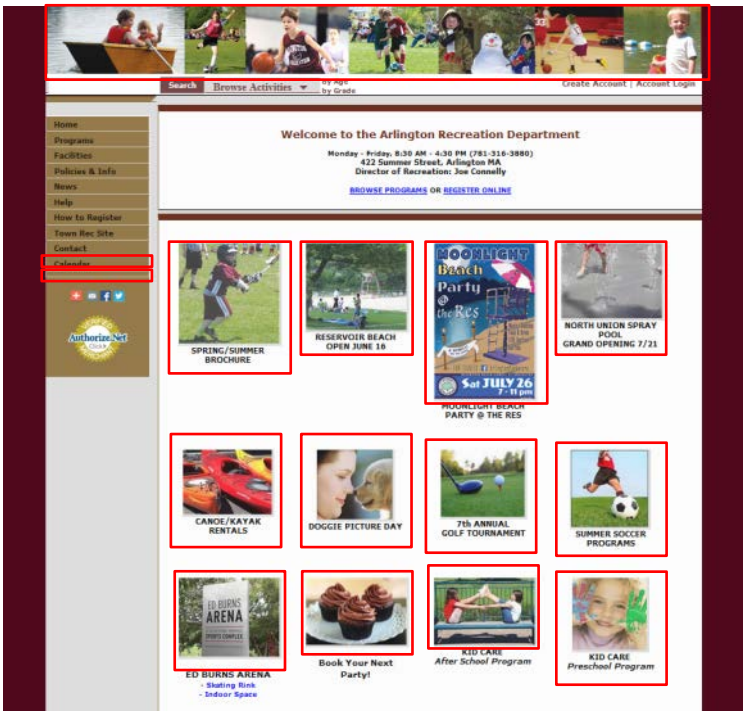
http://www.arlington.k12.ma.us/home/



Key findings in this section include the following:

- Very busy layout;
- The buttons on the right side of the page are hard to read;
- PDF documents are not accessible;
- The color coding does not seem to make sense;
- There is no “Heading” on this page;
- A lot of images are used for decoration (e.g., Bullets) and a lot of spacer images; decorative image should have null=”” alt text; and
- The banner image does not have alternative text.

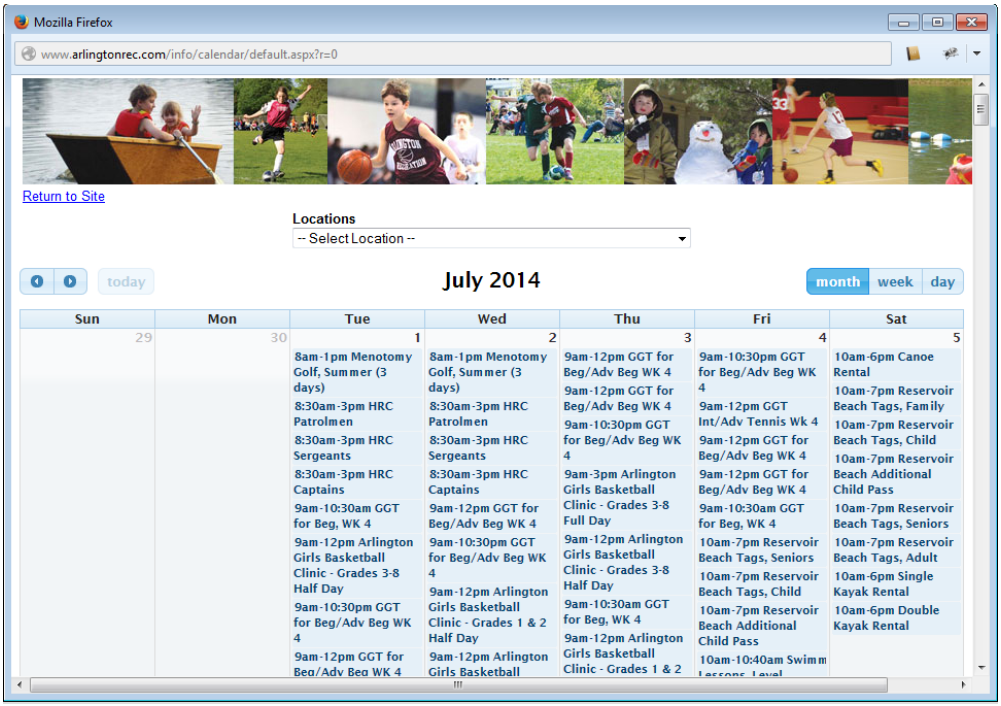
My Rec



Key findings and suggestions:

- Alternative text is missing on pretty much all pictures; and
- Empty link in the menu.
- Inconsistent Heading structure
- Bad contrast and hard to read font

Calendar

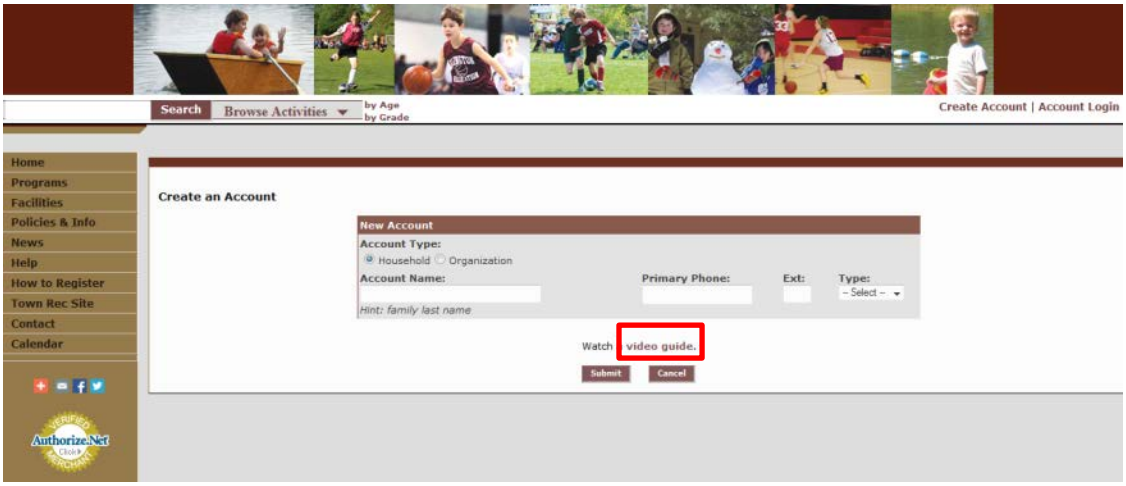


Users found the calendar on this website easily, although the calendar was not accessible for the users with a vision impairment or no vision at all. The screen reader reads all the events across horizontally without reading the day in which the events were happening. Our recommendation is to replace the calendar with an accessible table that includes a label for columns and headers similar to the calendar type on the main Arlington website.

Another suggestion is to avoid pop-up windows. They have a tendency to look like broken links for screen readers and for those using screen magnification they do not see that another window has opened up.

In addition, this page does not have a title. Our recommendation would be to add a title such as “Arlington Recreation Calendar.”

Create an Account



We discovered the video link is broken. When the user clicks on it, nothing happens. Also, add the correct captioning to the video because the current captioning is not accurate. According to the users, the video tutorial is too long. A recommended time for videos is between one and two minutes

Arlington Massachusetts – Website Graphic Evaluation

Contrast Issues with Text

The WCAG 2.0. Requirement's 1.4.3 Contrast (Minimum) (Level AA)

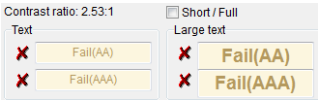
http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-contrast.html#larger-scaledef

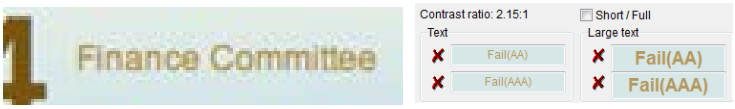
Text and images of text need to have a contrast ratio of at least 4.5:1.

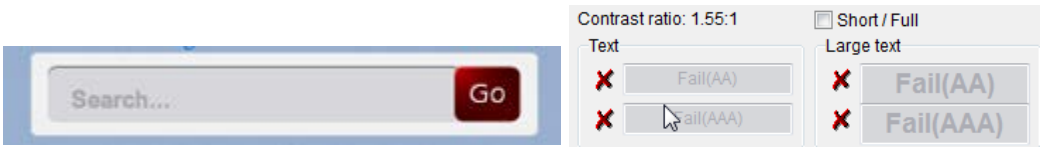
Large text (over 18 point or 14 point bold) has a contrast ratio of at least 3:1

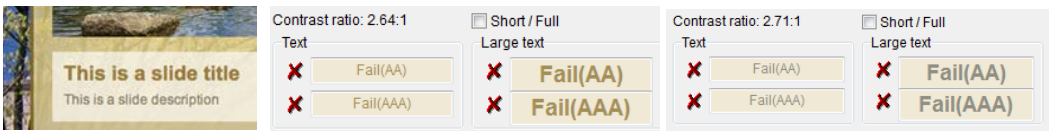
Use the Contrast Analyser – Application to adjust to the right contrast.

Examples of Text where the contrast is too low:

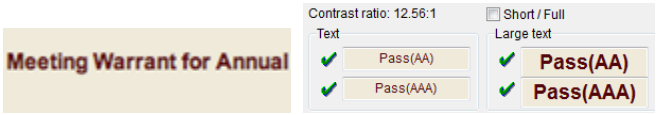




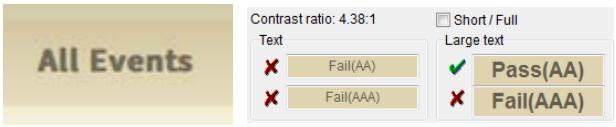




Examples of text where the contrast is good:

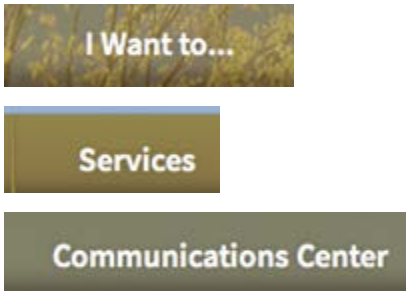


The text below is okay contrast for large text but it would be recommended to make the background lighter or the font darker:



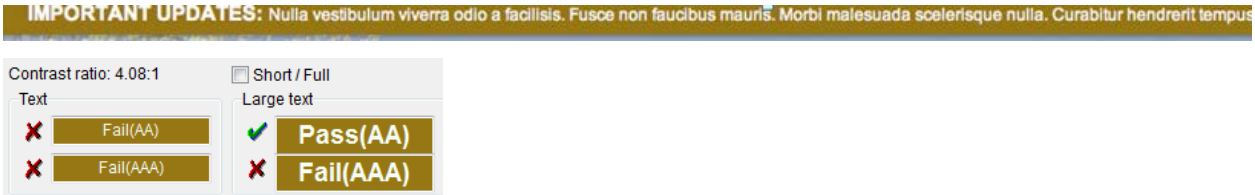
Additional Contrast Issues

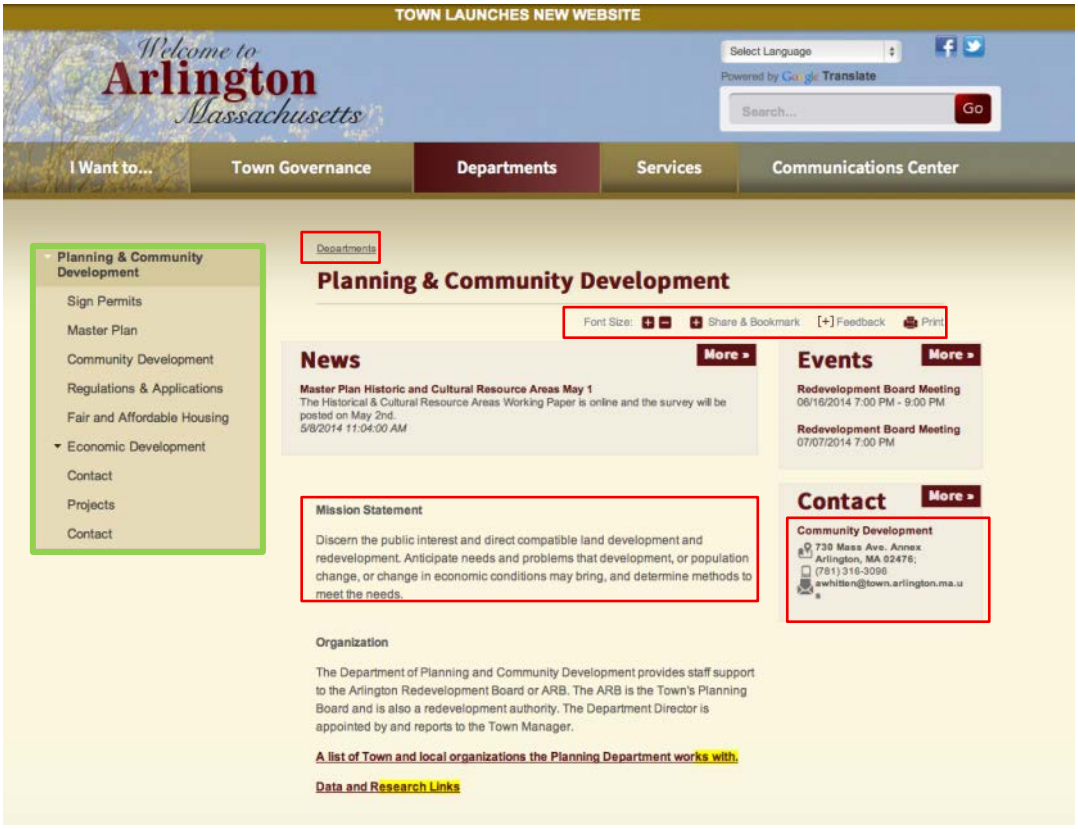
Navigation: This contrast is okay for large text, but it would be recommended to make the background slightly darker.



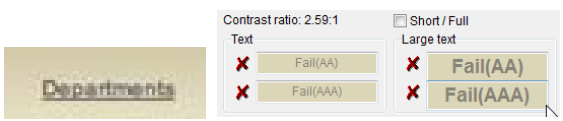
Icons menu: For user with low vision the small text and low contrast will also affect the readability of the text.

Important Updates: The contrast is too low for small text, especially in this context where the update should be the first thing the user notices on the page. Using a stronger contrast is recommended.





The contrast highlighted in red boxes above is not strong enough. See test results below.



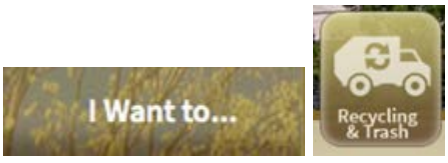
The contrast in the menu is a good contrast:

Background Issues

Using a picture background behind the text can make text harder to read. In the case of the title it is probably not an issue but for smaller elements it might confuse the users.

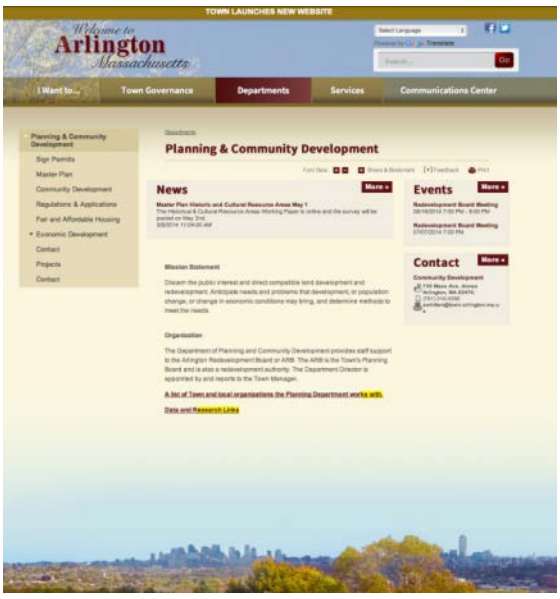
This is probably fine:

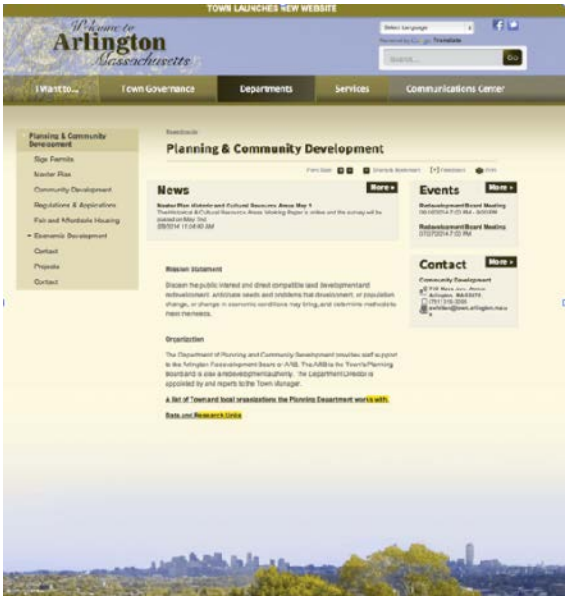
These will be harder , and not recommended for a menu items:



Color Blindness Color Choice

Below is a view of how the page would look for a user with color blindness type Deuteranopia. Once the color contrast issues noted above have been addressed this should be easier to read.





Other Issues – Calendar

A few small changes could be made on the calendar page that would make it easier to understand for individuals with cognitive issues.

- Changing the time from the 24-hour clock (military time) to the more common use of standard time. The use of military time forces many individuals to recalculate the time in their head.
- The large number for the day with the tiny month below might be confusing. Adding to the confusion is the calendar at the right showing a different month.
- Showing the full name for the month of June and only abbreviating the longer might also be helpful.

Conclusion

By addressing the key findings identified earlier, much progress can be made to ensure the accessibility of the *ArlingtonMA.gov* website. It is important for the *ArlingtonMA.gov* website team to continue to include older users with disabilities across the spectrum of skill and technology ability for ongoing testing and evaluation of the website. Furthermore, future online service application procurement processes should factor in accessibility to avoid the situation of linking city services to inaccessible external service providers.

We appreciate the proactive and positive attitude of the Public Information Officer of Arlington toward Accessibility. A great number of the issues pointed to during the web evaluation where fixed prior launch or shortly after reception of the draft report.

It is important to make sure that every person involved in the uploading of content pay the same attention to accessibility. We found that some portion of the content added after IHCD initial review of accessibility does not reflect the same quality in terms of accessibility. We suggest developing **a reference guide for the staff** to remind them of accessibility best practices. It is crucial to keep the content accessible and make sure that every image added will also have alternative text, and that proper use of headings is used throughout the website.

Many actions have already been taken to improve the accessibility of *ArlingtonMA.gov,* mostly focusing on the needs of Users with no vision, this is a great step forward. We would like to also stress the importance of the contrast issues that are very important for Users with low vision; the recommendations concerning the graphic evaluation have not been addressed yet.

The *ArlingtonRecMa.g*ov has some work to do be as accessible and welcoming to everyone as the Town clearly wants to be.

Resources

Guidelines

Section 508 Standards http://www.access-board.gov/sec508/standards.htm

World Wide Web Consortium, Web Accessibility Initiative http://www.w3.org/WAI/

Groups

Web Accessibility in Mind (Web AIM) www.webaim.org

Assistive Technology Industry Association http://www.atia.org

Captioning and Transcripts and Video Remote Interpreting

Captions and Transcription Services

http://www.uiaccess.com/transcripts/transcript_services.html

Open Source Subtitling Tool http://www.universalsubtitles.org/en/

Purple Video Remote Interpreting http://www.purple.us/

Audio Description of Visual Information

Web AIM http://webaim.org/techniques/word/

University of Wisconsin at Madison http://www.doit.wisc.edu/accessibility/online-course/index.htm

University of Washington, Accessible Multimedia Brochure

http://www.washington.edu/doit/Brochures/Technology/vid_sensory.html

Multi-media Access Generator (MAGpie)

http://ncam.wgbh.org/invent_build/web_multimedia/tools-guidelines/magpie

Audio Description http://www.astc.org/resource/access/medad.htm

Guidelines for Visual Descriptions:

http://www.csun.edu/cod/conf/2001/proceedings/0031alonzo.htm

Tools

WAVE Accessibility Evaluator http://wave.webaim.org/

Open Source Screen Reader http://www.nvda-project.org/

JAWS Screen Reader http://www.freedomscientific.com/products/fs/jaws-product-page.asp

Lynx Viewer (View Website in Text Only Format) http://www.delorie.com/web/lynxview.html

Applications

JW Media Player http://www.washington.edu/accessit/articles?1251

YouTube with an "Accessible Skin" http://icant.co.uk/easy-youtube/docs/index.html

Software and Service Providers

Net Centric Technologies (PDF Conversions) www.CommonLook.com