



Mayor's Office for  
People with Disabilities

Information Technology  
& Telecommunications

# The City of New York Digital Accessibility Report 2021

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**Abstract:** This report analyzes the state of accessibility of digital products managed by or on behalf of the [City of New York](#). It contains progress since the 2019 report including: websites enhanced for accessibility, status meeting goals, and progress adopting Web Content Accessibility Guidelines (WCAG) 2.1 Level AA standard into testing and auditing processes. This report also sets a plan for creating an online version of the NYC Digital Accessibility Report that will streamline the process of accessibility compliance reporting moving forward.

11 websites were audited across several templates for a WCAG 2.1 Level AA compliance score. Full compliance would be a score of 100%. Currently, the City of New York is aiming to get existing and new websites to at least an 85% score. The audits from this report will be used to gain insights into how to reach the goal of getting all websites to a score of 85% or higher.

The average score for all 11 websites audited is 80.36%. "New" template websites had an average score of 79.25%. "Old" template websites had an average score of 70%. Non-templated websites had an average score of 93%. Outside-hosted websites had an average score of 81.25%.

The main highlights of the 2021 report are the following:

1. An Updated process for testing, measuring and scoring WCAG compliance.
2. Adoption of WCAG 2.1 Level AA standard.
3. Plan to create a website to host all of the City of New York's Digital Accessibility data and guidance. It will be the home for information such as audit data, bug reports and accessibility guidance.

Some key insights include:

- Out of 675 images audited, 524 images have proper alt-text
- Out of 2776 links audited, 2461 links have proper labels

- 1144 forms on nyc.gov have been enhanced for accessibility since 2017. 620 forms were enhanced between July 2019 and July 2021
- 10+ COVID-19 websites and apps were enhanced for accessibility
- 90 websites were enhanced for accessibility since July 2019
- 15 agencies were engaged in the audits for this report
- 21 agencies were trained by the Digital Accessibility Coordinator on several digital accessibility related topics including creating accessible content and accessible virtual meetings since July 2019
- 28 agencies were trained by DoITT on TeamSite accessibility since July 2019
- 10 agencies are posting on social media with alt-text
- 30 videos were created with audio description since 2017
- 131 electronic documents were enhanced for accessibility since July 2019

To see the full details, refer to Appendix 3 NYC Accessibility Enhancements. Also, check out the tables in Part 5 of this document.

## **Part 1: Introduction**

This is the third installment of the [City of New York's](#) Digital Accessibility report required by [Local Law 26 \(LL26\)](#). LL26 was passed in March of 2016, which requires City agencies to make a reasonable effort to make their websites accessible, appoint a designee, adopt standards and publish a web accessibility report every two years. In the past four years, the City of New York has accomplished the following:

- Appointed a Digital Accessibility Coordinator to oversee implementation of LL26.
- Released two digital accessibility reports. The first was published in 2017 and the second one was published in 2019.
- Created a digital accessibility toolkit and continue to update it.
- Organized three conferences on the topic of digital inclusion called [DiCon](#)
- Enhanced the accessibility of 131 electronic documents and multimedia content

- Created ten videos with captions and audio descriptions
- Made seven mobile apps accessible
- At least ten City agencies have begun posting on social media with alt-text
- Built out accessible COVID-19 websites and other emergency public health communications

This is the third report required by Local Law 26. It will cover the following:

- Introduction to Local Law 26, WCAG 2.0 and City of New York auditing processes.
- Progress reaching goals established in previous reports.
- Goals for the 2023 Digital accessibility report.
- All accessibility enhancements since the 2019 report including: websites, mobile apps, e-mails, electronic documents, social media posts, online training modules, and videos.
- Trainings, conferences and guidance materials that aim to foster a culture of accessibility within City agencies.

## **Appendixes**

This report is supplemented by three Excel spreadsheets containing information on City of New York digital assets, accessibility audits and accessibility improvement activities. Each appendix is explained below.

### **Appendix 1: Survey Tool**

12 websites were audited for this report. The data for all audits conducted is contained in Appendix 1: Survey Tool. The City of New York Web Accessibility Scoring Methodology was used to rate the websites audited. It is based on WCAG 2.1 criteria. The methodology is explained in more detail in the “info” tab of the spreadsheet as well as in Part 3 of this report under the “City of New York Web Accessibility Scoring Methodology” heading.

For the 2021 report, the scoring methodology was updated to add WCAG 2.1 level AA. The existing WCAG 2.0 criteria was also updated based on our findings in the past four years.

## **Appendix 2: NYC Websites**

The Digital Accessibility Coordinator reached out to Disability Service Facilitators and Chief Information Officers across many City agencies in order to put together a list of websites owned by or created on behalf of the City of New York. Appendix 2: NYC Websites contains the results of this research. It contains a list of websites using the “new” template, “old” template, non-templated, and outside-hosted websites. These terms are defined in Part 4 of this report. Please note that the information gathered in this appendix is to the best knowledge of the Digital Accessibility Coordinator. It is not an official list of City of New York Websites.

## **Appendix 3: NYC Accessibility Enhancements**

This appendix contains efforts that the City of New York took to improve website accessibility across agencies. It includes:

- Websites enhanced for accessibility
- Apps enhanced for accessibility
- Digital Maps enhanced for accessibility
- Videos enhanced for accessibility
- Electronic documents enhanced for accessibility
- Online training modules enhanced for accessibility
- City agencies trained by the Digital Accessibility Coordinator
- City agencies trained by the Web Strategies Team at DoITT
- City agencies that make their social media posts accessible by including alt-text for images
- City of New York email blasts that include alt-text

## **Appendix 4 WCAG 2.1 Scoring Methodology Breakdown**

This Appendix contains a full break down of our testing and scoring methodology for measuring WCAG 2.1 Level AA compliance. Each criterion is explained and includes the following:

- A description of the criterion and what it means
- Guidance from W3c's Understanding WCAG Success Criterion website
- How to test for each criterion
- How to score each criterion in the survey spreadsheet

For the full breakdown of NYC's scoring methodology for WCAG 2.1 Level AA, refer to Appendix 4 WCAG 2.1 Scoring Methodology Breakdown.

## **Appendix 5 Bug Reports**

In an effort to increase transparency regarding accessibility efforts, bug reports have been included in this report. They contain websites that were enhanced in 2021. Each report contains:

- Bug stats: resolved, partially resolved or unresolved
- Priority level: High, Medium or Low
- Issue description including the expected behavior
- Proposed solution for each issue including links for guidance
- Detailed log of updates resolving each bug including dates

To check out the bug reports, refer to Appendix 5 Bug reports.

## **Important Notes**

Note, the websites audited in previous reports were measured for [WCAG 2.0](#) Level AA standard. Since 2019 the City of New York has successfully transitioned to using the [Web Content Accessibility Guidelines \(WCAG\) 2.1](#) standard and it was used to audit websites for the 2021 report.

Note: In 2019, the title of this report was changed from "web accessibility report" to "digital accessibility report" because it started to include information about the accessibility of e-mails, mobile apps, social media posts, videos and other digital products, in addition to websites.

## What is Digital Accessibility?

The web is a platform for applying for and accessing City services. It gives the City the opportunity to reach more people. However, not everyone's needs are the same. Almost one million New Yorkers have some form of disability. Design, whether it's in physical architecture or an organization's website, can affect a person's ability to access something they need. The disability community has assistive technology and other tools to access the web. The design and coding of the websites that people with disabilities visit can determine whether users feel successful or frustrated in accomplishing their task.

Accessibility is the practice of designing or enhancing the physical, social, or virtual environment so that people of all abilities are able to perceive and interact with them independently. Since the disability community faces extra barriers, it is the City's responsibility to help all New Yorkers access City services available through the web. The Americans with Disabilities Act (ADA) already requires government entities to make their services and websites accessible. As of March 14, 2016, accessibility requirements were codified in [Local Law 26, which requires New York City to adopt a protocol for City websites relating to website accessibility for persons with disabilities](#).

Digital accessibility pertains to all digital products used by the City of New York. Examples include:

- Websites such as [NYC Hope](#) from the [Mayor's Office to End Domestic and Gender Based Violence](#) (ENDGBV)
- Mobile apps such as [Notify NYC](#) from [New York City Emergency Management](#) (NYCEM)
- Electronic Documents such as the [Truth in Broadband Report](#) from The [Mayor's Office of the Chief Technology Officer](#) (MOCTO)
- [Social media posts](#) from City agencies such as the [Department of Transportation](#) (DOT)
- Email newsletters such as Work Well by [Office of Labor Relations](#) (OLR)
- Videos such as the [anti-smoking Public Service Announcements](#) by the [Department of Health and Mental Hygiene](#) (DOHMH)
- Online training modules such as the [Sexual Harassment training](#) from The [City Commission on Human Rights](#) (CCHR)

## **Defining Disability**

For the purposes of digital accessibility, this report will focus on disabilities that affect the eyes, ears, hands, and brain. Some examples are blindness, deafness, learning disabilities, cognitive disabilities, motor-function disabilities, neurological disabilities, or a combination of the above.

## **What is Assistive Technology?**

Some folks with disabilities use assistive technologies. [Assistive Technology](#) (AT) is any piece of equipment, product, or system that is used to maintain or improve the functional capacities of people with disabilities. Common examples include wheelchairs, hearing aids, crutches or even glasses and contact lenses. The following are examples of assistive technologies that are used by people with disabilities to interact with websites.

## **Examples of Assistive Tech**

There are many assistive technologies for a variety of disabilities. For members of the blind and low vision community, there are a few ways to access computers and websites.

### **Screen Readers**

A [screen reader](#) is software that uses synthesized speech to read the screen's contents and structure out loud. The user interacts and navigates through the content by using touch gestures or keyboard commands.

### **Screen Magnifiers**

People with low vision use [screen magnifiers](#) to enlarge the contents of the screen. Screen magnifiers can also change background and font colors for better contrast.

For those with motor-function disabilities, there are ways to control the computer through various means.

## **Hands-Free Technologies**

Hands-free technologies include the use of voice commands, head wands, mouth sticks, switch controls, and alternative keyboards.

[Read more about assistive technology for motor-function disabilities.](#)

## **Part 2: Local Law 26**

Signed on March 14, 2016, [Local Law 26 adds a new section 23-802 to the Administrative Code](#) concerning the adoption of a protocol relating to the accessibility of websites managed by and on behalf of the City of New York. It requires:

- The Mayor must appoint a designee to implement this law.
- The City of New York must adopt either the Web Content Accessibility Guidelines (WCAG) 2.0 AA standard or Section 508 federal standards codified at 36 CFR 1194.22 or any successor standards provided that the adopted protocol may differ from these standards in specific instances when the Mayor or Mayor's designee determines, after consulting with experts in website design and reasonable accommodations for people with disabilities, and the holding of a public hearing, that such differences will provide effective communication for people with disabilities, and that such differences are documented in such protocol.
- A report on the compliance of all websites managed by or on behalf of the City of New York that must be submitted no later than July 1, 2017.
- A subsequent report must be submitted every two years thereafter.

Note: The law also states, "This section does not require an agency to take any action that would result in a fundamental alteration in the nature of a service, program, or activity or in undue financial and administrative burdens."

## Designee

The Mayor's designee is the Digital Accessibility Coordinator, who is a [Department of Information Technology and Telecommunications](#) (DoITT) employee. DoITT partners with the [Mayor's Office for People with Disabilities](#) (MOPD) in this effort. Other City agencies have contributed as needed.

## Standards

The City of New York has adopted the [Web Content Accessibility Guidelines \(WCAG\) 2.1 level AA](#) standard. This standard is used by many other organizations worldwide. WCAG 2.1 adds to the existing WCAG 2.0 criteria. The guidelines were created by the [World Wide Web Consortium](#) (W3C).

The Web Content Accessibility Guidelines 2.1 are based on [four principles of accessibility](#). These principles dictate the criteria a website must have in order to be accessible. Content must be:

1. Perceivable
2. Operable
3. Understandable
4. Robust

For purposes of the audit conducted in this report, the criteria behind the principles laid out in WCAG 2.1 are used as a [checklist](#) that pertains to each of the four principles. The checklist items have numbers associated with them.

## Perceivable

Website users must be able to perceive all of the information that is being presented regardless of their ability to see or hear. This principle pertains to checklist items that start with the number 1. For example, 1.1, 1.2.1, 1.2.3, etc. Checklist items include "[1.1 Non-text content](#)," "[1.3.1 info and relationships](#)," and "[1.3.2 meaningful sequence](#)."

## **Operable**

User interface components and navigation must be operable. The interface should not require interaction that a user cannot perform. This principle pertains to checklist items that start with the number 2. For example, 2.1.1, 2.1.2, etc. Checklist items include "[2.1.1 Keyboard](#)," "[2.1.2 no keyboard traps](#)," and "[2.2.1 timing adjustable](#)."

## **Understandable**

The content and interface must be understandable. Users must be able to understand the information as well as the operation of the user interface. The content or operation cannot be beyond their understanding. This principle pertains to checklist items that start with the number 3. For example, 3.1.1, 3.1.2, etc. Checklist items include "[3.1.1 language of page](#)" and "[3.1.2 language of parts](#)."

## **Robust**

As technologies and user agents evolve, the content should remain accessible. This principle pertains to checklist items that start with the number 4. For example, 4.1.1 and 4.1.2. Checklist items include "[4.1.1 parsing](#)" and "[4.1.2 name, role, value](#)."

## **WCAG 2.1:**

Since 2019, the City of New York has adopted [WCAG 2.1](#). The standard adds 12 new A and AA criteria. The new criteria cover mobile accessibility, as well as low vision and cognitive accessibility.

Below is a list of criteria that was added to NYC's accessibility testing and auditing processes.

- [WCAG 1.3.4 Orientation](#)
- [WCAG 1.3.5 Identify Input Purpose](#)
- [WCAG 1.4.10 Reflow](#)
- [WCAG 1.4.11 Non-text Contrast](#)

- [WCAG 1.4.12 Text Spacing](#)
- [WCAG 1.4.13 Content on Hover or Focus](#)
- [WCAG 2.1.4 Character Key Shortcuts](#)
- [WCAG 2.5.1 Pointer Gestures](#)
- [WCAG 2.5.2 Pointer Cancellations](#)
- [WCAG 2.5.3 Label in Name](#)
- [WCAG 2.5.4 Motion Actuation](#)
- [WCAG 4.1.3 Status Messages](#)

Check out [What's new in WCAG 2.1](#) for more information.

## Part 3: Testing Methods

To measure compliance with WCAG 2.1 guidelines, testing was performed on various City of New York agency websites. Testing involves measuring whether or not the elements and content that make up a webpage are reflecting success criterion from the [WCAG 2.1 checklist](#). Success Criteria are the specific components that a webpage must adhere to in order to succeed for each of the criteria mentioned above. Websites were tested on some of the following:

- Color contrast: text, background, links, and other significant areas must meet the required color contrast ratio.
- Text resizing: users should be able to magnify the webpage up to two times.
- Reflow: Content should be responsive to the size of the viewport such that a user is only required to scroll vertically without loss of content or functionality.
- Alt-text: text descriptions should be included for images, logos, and pictures. This text is not visible on screen. It is embedded for screen reading technologies to interpret for users.
- Keyboard access: all links, buttons, and other interactive controls should be navigable by pressing the tab key only.
- Heading structures: Pages should be structured and the headings and sub-headings that make up a page should be properly formatted to work with assistive technologies.
- Forms: all input fields should have text labels and validation errors that should be easy to perceive and correct.

- Dynamic content: modal dialogues, accordions, status messages and other page changes that occur without loading a new page need to move focus to the proper area, automatically announce as well as hide and unhide relevant content.
- Content that plays automatically: content that is longer than three seconds and can be played automatically should be easily disabled.
- Captions: captions should be provided for video or audio content.
- Audio description: videos should have an audio track that verbally describes what is happening visually.
- Video controls: all embedded videos should have accessible controls with accessible text labels and should not disappear once the video starts playing.
- Link labels: all links must have unique labels that are descriptive of the page they lead to.
- And more (Refer to Appendix 1 under the "Info" sheet for a list of full criteria).

A combination of the following two methods was used to measure compliance:

- Automated testing: an automated tool is usually a web browser add-on that generates a report when the user submits a webpage address. Such a report would contain a list of errors. For example, a page might have three images that are missing alt-text. Note: automated testing is effective at detecting some but not all types of accessibility barriers.
- Manual testing: manual testing entails a person visiting the website using assistive technology and manually testing it by going through the contents to find accessibility barriers. For example, a user might report that a page has a pop-up dialogue that is not made available to assistive technology and keyboard users.

## **Automated Testing Tools**

A number of automated tools were considered for the purposes of testing websites' accessibility. The tools include [aXe](#), [total1y](#) and [WAVE](#). WAVE was found to be the most useful to test for color contrast, missing document

language, and duplicate labels. The [W3C Markup validation Service](#) was used to test for checklist item "[4.1.1 parsing](#)".

## **Manual Testing Tools**

Manual testing included using a combination of assistive technologies, web browsers, and operating systems.

Windows Ten version 20h2 was used for testing. For this operating system, the following assistive technologies were used:

- JAWS version 2021.2105.53
- NVDA version 2020.4

For Windows, the browsers tested include the following:

- Google Chrome version 91.0.4472.77
- Mozilla Firefox version 78.11 Extended Support Release version

Mac OS 11.2.3 was used for testing. For this operating system, the following browsers were used in conjunction with the built-in screen reader called Voiceover:

- Safari version 14.0.3
- Google Chrome version 91.0.4472.114

**Note:** Testing with Internet Explorer was not included because that browser is no longer supported.

## **City of New York Web Accessibility Scoring Methodology**

The following methodology was created to measure accessibility based on the [WCAG 2.1 level AA](#) standards that the City of New York has chosen to adopt.

For every page tested, various techniques were used to measure WCAG criteria. Those criteria are then averaged together to create a score for that page. For each website, a minimum of five pages were tested and averaged together to create a City of New York Accessibility Score for that website. Some websites had less than five pages such as [NYC External Vaccination Scheduler](#).

## **Measuring and Scoring for Specific WCAG Criteria**

In Appendix 1, each WCAG checklist item is measured and given a score between 0 and 1. For example, "[1.1 non-text content](#)" pertains to the number of images that appear on a page. To measure, all images on a page were counted, then the number of instances of alt-text for each image was counted. An average was calculated from those figures. For example, if there were six images and six alt-texts, then the score would be 1. If there were six images and only three alt-texts, the score would be .5.

Some checklist items were given a 0 or 1 score instead of an average. For example, checklist item "[2.1.2 no keyboard traps](#)" was not useful to count. It either exists on the page or not. Therefore, scores given were either 0 or 1.

In other cases, scores were rounded to the nearest quarter because of ambiguity. For example, the checklist item "[1.3.1 info and relationships](#)" pertains to proper syntax and heading structures. Since a heading structure that is not proper can still be useful, scores such as 0, .25, .5, .75 and 1 are given to pages regarding this criteria. For criteria where the score is rounded to the nearest quarter, specific definitions were created for each score. As an example, check out the scoring definitions for 1.3.1 below.

- Score 1 = All elements have proper formatting. Headings are headings, tables are used properly and have table headers, lists have tags, etc.

- Score .75 = A few elements are missing correct formatting, tables missing header rows. No significant elements or required fields are inaccessible.
- Score .5 = More than a few of the elements on the page have proper formatting. Significant elements or required fields are not accessible.
- Score .25 = Only a few elements on the page are properly formatted.
- Score 0 = No proper formatting. No headings, lists and form fields. Also, if a table is used for layout purposes.

Some checklist items are not applicable for all pages. For example, checklist item "[1.2.1 audio only and video only pre-recorded media](#)" is not applicable if the page does not have media such as a video or podcast. When a checklist item was not applicable, N/A was put into the score field and it was not counted towards the average checklist score for the page.

## **Page and Website Scoring**

As mentioned before, all pages that were audited for a website are averaged together to calculate an accessibility score for the entire website.

The scoring methodology is measuring overall WCAG 2.1 Level AA compliance. Therefore, full compliance would be a score of 100%. Previously, the City of New York was aiming to reach a 75% accessibility score. As of this report, the City of New York is striving to reach an accessibility score of 85%. This milestone will be raised in future reports to ensure a higher standard is reached.

For more details about scoring for each of the criteria, please refer to Appendix 1 under the "Info" tab or Appendix 4 WCAG Scoring Methodology Breakdown.

## **Updates to Measuring and Scoring Methodology:**

Since the 2019 report, all of the scoring methodology was updated and 12 new WCAG criteria were added. The new guidance includes:

- A description for each criterion.
- When to test for each criterion.
- A link to Understanding Success Criterion from the WCAG website.
- How to test each criterion.
- How to score each criterion in the survey spreadsheet.

For a full breakdown of all 52 WCAG criteria, refer to Appendix 4: WCAG Scoring Methodology Breakdown.

## **Part 4: City of New York Websites Breakdown**

A citywide outreach effort was made to compile a list of websites owned by the City of New York. The following website and page counts are based on that effort.

The City of New York owns and manages websites that are both public-facing and for City employee use. Internal websites include, for example, training modules and directories. Public-facing websites were the main focus of this report because they are designed to be used by a wider audience.

There were 316 websites that were counted as part of research done for this report. There are two types of public-facing websites. The first are websites that reside on the NYC.gov server. For the purposes of this report, these websites will be referred to as NYC.gov server-hosted websites. Within this type, there are two templates used to create websites for City agencies: the “old” and “new” templates. There are also some websites on NYC.gov that are “non-templated,” which means that they were built with static HTML. The second type of websites are ones hosted outside of the NYC.gov server. For the purposes of this report, they will be referred to as outside-hosted websites.

## **NYC.gov server-Hosted Websites**

There are 236 websites hosted on the NYC.gov server. The following section will break down the difference between “new” template, “old” template and non-templated websites that are hosted on the NYC.gov server.

### **Old Template Websites**

In the 2017 web accessibility report, there were 72 websites on the NYC.gov server that used the “old” template. This template offers fewer accessibility features than the “new” template. Since the 2017 report, more than 50 websites that were using the “old” template were transitioned over to the “new” template. As of the 2019 report, eleven websites were still using the “old” template. According to the current count, there are only four websites that are still on the “Old” template. For a list, refer to Appendix 2 under the “Old” template tab.

For this report, only one “old” templated website was audited. The other three websites are using the same template and would score similarly. The [Workforce Development website](#) received an accessibility score of 70%. This makes it 15% away from our 85% goal which is why we have phased out this template. Please note, as of the release of this report, the Workforce Development Website was upgraded to the “New” template. It is no longer using the “Old” template. Moving forward “Old” templated websites will not be audited because they are being phased out for the reason that they no longer fulfil the City of New York’s standards.

### **New Template Websites**

In the 2019 report, there were 210 websites on the NYC.gov server that used the “new” template. As of the 2021 report, there are 211 websites on the “New” template. The template supports more accessibility features than the “old” template.

In this report, four websites were audited that use the “new” template. The average score was 79.25%. During our audits, we identified a number of

template changes that will be implemented in the future to reach the goal of 85%.

For a list of websites that use the “new” template, please refer to Appendix 2: NYC Websites. The audit scores for each website can be found in Part 5 of this document or Appendix 1.

### **“Non-Templated” Websites**

As of the 2019 report, there were 18 websites on the NYC.gov server that are not templated, and are built with static HTML. According to data collection, there are 21 non-templated websites on the NYC.gov server. Only one non-templated website was audited for this report. During the auditing process for this report, Vaccine websites were prioritized which resulted in less time to audit non-templated websites. Moving forward auditing non-templated websites will be prioritized so that the City of New York has better insights into how accessible the non-templated websites are.

[Vision Zero](#) was audited and it received a score of 92%. For a list of websites that are not templated, please refer to Appendix 2: NYC Websites. The audit scores for each website can be found in Part 5 of this document or Appendix 1.

### **Differences Between the “Old” and “New” Templates**

There are many differences between the templates that make the “new” template more accessible than the “old” template. From a foundational perspective, the “new” template uses HTML 5 while the “old” template uses HTML 4. It is considered an accessibility best practice to use HTML 5. The audit results for this report show that the average accessibility score for “new” template websites is 92.0% while the average accessibility score for “old” template websites is 61.6%.

Furthermore, the “new” template allows for better implementation of the following features:

- Heading structures
- Alt-text for images
- Labels for form fields
- Accessible error reporting for forms
- Keyboard access
- Color contrast
- Accessible Captchas
- Larger base font (16 pixels)
- Rotating banner

## **Outside-Hosted Websites**

In the last report, there were 74 websites hosted outside of the NYC.gov server, which may still be hosted by the City. An example is [Growing up NYC](#). For the 2021 report, we counted 80 websites on outside-hosted servers. Outside-hosted websites refer to websites that are not hosted on the NYC.gov server and have either been created by a vendor or created by an agency. Four outside-hosted websites were audited for this report. The average accessibility score for outside-hosted websites is 81.25%. For a list of outside-hosted websites, please refer to Appendix 2: NYC Websites. The audit scores for each website can be found in Part 5 of this document or Appendix 1.

## **Scope/Pages Tested**

In this report, a sample of 63 pages from 11 websites were audited in total representing both NYC.gov server hosted and outside-hosted websites. The breakdown is as follows:

- 4 “new” template websites
- 1 “old” template website
- 2 non-templated websites
- 2 outside hosted websites
- 3 web applications
- 1 internal website

The average accessibility score for all websites tested is 80.36%.

For websites that were audited, a sample of pages was used for testing purposes. The samples included but were not limited to the following:

- Select homepages;
- Select "About" pages;
- Select "Contact" pages;
- Select "E-mail the Commissioner" pages; and
- Select disability and accessibility pages.

## **Reasoning**

A sample of the three types of pages were chosen for the following reasons:

- The homepages tend to be unique from the rest of the pages on each website.
- The "About" pages are consistently included on websites and tend to have similar layouts to those of other pages.
- The "Contact" pages usually have forms that need to be manually tested. If the "Contact" page is accessible, visitors will be able to establish contact with a City agency to get answers they may not be able to find by navigating the website.

## **Part 5: Summary of Digital Accessibility Enhancements**

### **Auditing results:**

The newly updated City of New York Accessibility Scoring Methodology was used to audit 11 websites. This score is a percentage of how compliant with WCAG 2.1 Level AA a web page is. Below is a breakdown of scores for each of the types of websites.

The score for full compliance is 100%. Currently the City of New York is aiming to get as many websites as possible up to 85% WCAG 2.1 accessibility score.

Please note: while auditing for this report, COVID-19 websites were prioritized. As a result, only one website was tested from the “old” template website list and one website was audited from the list of non-templated websites. “Old” templated websites are being phased out and support a lower standard of accessibility. Moving forward, non-templated websites will be prioritized for audits conducted after the publishing of this report.

All audits conducted can be found in Appendix 1: Survey Tool 2021.

Type:	Websites Tested:	Average Score:
New Template	4	79.25%
Old template	1	70.0
Non-templated	1	92%
Outside-Hosted (Includes web applications)	4	81.25%
<b>Total:</b>	<b>11</b>	<b>80.36</b>

## Website scores Breakdowns

Website	Type	WCAG 2.0 Total Score	WCAG 2.1 Single A only	WCAG 2.1 AA only	WCAG 2.1 Total Score	Date completed	Total Images	Total Alt-text	Total links	Total links with Accessible Labels
My Vaccine Record	Application (Outside hosted)	93	97	83	91	6/29/2021	50	50	233	233
Workforce Development	Old template	70	68	73	70	6/20/2021	12	5	135	115
NYC Recovery for All	Outside Hosted	78	84	79	82	6/23/2021	39	35	315	297
One NYC	Outside Hosted	79	78	70	73	6/24/2021	121	60	291	217
Media and Entertainment	New Template	78	84	74	80	6/20/2021	132	118	500	449
Contracts Services MOCS	New template	77	81	72	77	6/19/2021	73	57	239	215
HPD	New template	84	88	76	82	6/19/2021	64	39	258	233

External Vaccination scheduler	Application (Outside hosted)	77	80	69	75	6/22/2021	1	1	13	13
DHS	New Template	75	85	71	80	6/19/2021	62	54	320	311
CAPS Online	Application (Internal)	83	92	71	82	6/14/2021	61	50	192	153
Vision Zero	Non-templated	93	95	90	92	6/29/2021	47	42	230	175
Totals or Averages					80.36		675	524	2776	2461

## Summary of Accessibility Improvements

The following sections are summaries of accessibility efforts done by the City of New York in the past two years. They contain information and statistics on digital products that were enhanced for accessibility as well as accessibility trainings that were conducted. For a full list of digital products that have been enhanced for accessibility, refer to appendix 3: NYC Accessibility Progress.

### Websites Enhanced Since 2019

Since 2019, 12 websites have been enhanced for accessibility by DoITT’s Web strategies team. The team also added 35 new websites with accessibility practices such as alt-text, headings, keyboard access and color contrast.

To add to that, the Digital Accessibility Coordinator supported agencies in enhancing 33 websites for accessibility. Between DoITT and MOPD’s efforts, 90 websites were enhanced for accessibility since 2019. For a breakdown of which websites were enhanced by DoITT and the Digital Accessibility Coordinator, refer to Appendix 3 NYC Accessibility Enhancements.

As the web strategies team creates new websites and templates, they apply accessibility practices they have adopted since 2017. Since 2019, 35 websites were created with accessibility in mind. For a list, refer to Appendix 3 NYC Accessibility Enhancements.

## **Accessibility Enhancements to other Digital Products**

Below is a list of digital products enhanced for accessibility since July 2017.

- 11 digital maps were enhanced for accessibility
- 7 mobile apps were enhanced for accessibility
- 131 electronic documents were enhanced for accessibility
- 3 online training modules were enhanced for accessibility
- 30 videos were audio described
- At least 50 videos were captioned
- 10 agencies have started posting on social media with alt-text for images
- 5 email blasts have started including alt-text

## **Training Efforts**

Since the 2019 report, the Digital Accessibility Coordinator has trained 21 agencies on various topics around digital accessibility. Several agencies had multiple trainings. The Web Strategies Team at DoITT has trained 28 agencies in creating accessible content using TeamSite since July 2019. Between the Digital Accessibility Coordinator and the Web Strategies Team, 78 agencies were trained since 2017.

## **Accessibility Enhancements:**

The following is a list of accessibility enhancements made to digital products since the 2017 web accessibility report. Note: not all items in this list apply to all digital products. Some items such as captions and audio descriptions are specific to one type of digital content.

- Alt-text for images
- Proper heading tags and heading structures
- Unique link labels
- Accessibility labels for all buttons, links and interactive elements
- Keyboard access to all controls including links, buttons and other interactable elements
- Content must follow a logical order when navigated by screen reader or keyboard users
- Keyboard visual focus stands out and is easy to see

- Text alternatives for digital maps
- Color contrast for text: 4.5:1 ratio between text and background
- Non-text contrast: 3:1 for images and form fields
- Text resizing to 200%
- Reflow: Zoom into 400%
- Text spacing
- Auto-fill attributes
- Content on hover
- Accessible fonts: San Serif
- Use of plain language
- Include instructions for interacting with content whenever possible including accessible error messages
- Audio, video or slide content does not play automatically
- Use of accessible video players such as YouTube, Vimeo or other HTML 5 players
- Video content has captions and audio descriptions
- Podcasts and other audio content has transcriptions
- Hiding irrelevant content from screen readers
- Shifting screen reader and keyboard focus to modal dialogues and other pop-ups
- Use of ARIA-live attribute to announce when dynamic content has appeared on screen
- Created filters to narrow down dense content or search results
- Use of accessible accordions for expanding content
- Keyboard access and alt-text for interactive infographics

## **Accessible Assets:**

The following section contains examples of accessible digital products that the City of New York worked on internally or with vendors.

## **COVID-19 websites:**

The following is a list of COVID-19 related websites that were enhanced for accessibility.

- [DOHMH COVID-19 Website](#)
- [Vaccine Command Center](#)

- [Vax4NYC](#)
- [NYC Vaccine Finder](#)
- [H+H External Vaccination Scheduler](#)
- [COVID-19 Engagement Portal](#)
- [DOHMH Data: Neighborhood Profiles](#)
- [DOHMH COVID-19: Latest Data](#)
- [Access NYC: Coronavirus updates](#)
- [Access NYC: Understanding benefits for workers](#)
- [Access NYC: Pandemic Support](#)

### **Accessibility of Maps:**

Since 2017, 11 maps were enhanced for accessibility. Between July of 2019 and July of 2021, 4 maps were enhanced. In order to make maps accessible to screen reader users, MOPD has worked with DoITT and other City agencies to create equivalent text-based lists with headings and filters for enhanced navigation. Below are four examples.

- [NYC Vaccine Finder](#)
- [DOHMH - COVID-19 Find a Testing Site](#)
- [DOT – Pedestrian Ramps](#)
- [DOT – Feedback Portal](#)
- [HRA – SNAP Center Locations](#)
- [DOB – Sidewalk Sheds Map \(Map Version\)](#)
- [DOB- Sidewalk Sheds Map \(Accessible List\)](#)
- [NYCEM: Hurricane Evacuation Zone Finder](#)

### **Accordions:**

Accordions are buttons or links that expand and collapse to show or hide content on a page. An accessible accordion is one that works for both non-disabled and disabled users. For screen reader users, accordions need to share the correct information so that screen readers would announce its state as collapsed or expanded. With an accessible accordion, when a section is collapsed, the content is hidden visually as well as for assistive technologies. Below are two examples of pages that use accessible accordions. These same accordions are used in other websites on nyc.gov.

- [MOPD – COVID-19 Resources for People with Disabilities](#)
- [MOPD – Accessible Virtual Activities](#)

### **Interactive Infographics:**

DOHMH created an interactive infographic that is accessible. It's a single page application that contains images that bring up messages when clicked. The images were given alt-text and keyboard access. The ARIA-Live attribute was used to announce when new content has appeared on the page. Finally, color contrast enhancements were made to the page at large and borders were added around the clickable snowflakes for low vision users. Accessibility instructions were included to accommodate first time users. Recently, DOHMH added one more fix to stop the animations of the snow for users that are sensitive to moving content.

- [DOHMH Winter Weather Safety Infographic](#)

### **Audio Description:**

MOPD has worked with agencies such as DOT, NYCEM and TLC to include [audio description](#) in the videos they create. This ensures that the videos are accessible to the blind community. Below are some examples of audio described videos from various NYC agencies.

- [MOPD Becky Curran – NYC at Work Video Profile](#)
- [DOT Cycle Eyes](#)
- [NYCEM Ready New York - A well planned escape](#)
- [DOHMH: Audio Described Videos Playlist](#)

### **Podcast Transcripts:**

Some NYC agencies have started their own Podcasts. Since Podcasts are typically in an audio format, they can be accessible to Deaf audiences through transcripts. Check out New York City Emergency Managements Podcast called [Prep Talk](#) as an example.

## **Part 6: Accessibility Plan Progress**

In the 2017 web accessibility report, an accessibility plan was created. The plan set accessibility goals that DoITT and MOPD have worked together in order to reach. Below are the statuses of these goals.

### **Progress for NYC.gov server-Hosted Websites**

#### **Non-templated Websites**

NYC.gov server-hosted “non-templated” websites were to be addressed in the following ways:

- The Digital Accessibility Coordinator will be reaching out to specific City agencies with regards to accessibility remediations for the 9 “non-templated” websites.
- DoITT and other City agencies will inform the Digital Accessibility Coordinator about new “non-templated” websites for accessibility testing and remediation.

#### **Non-Templated Websites Progress:**

There are 21 websites that are currently on the NYC.gov server that do not use templates. Since 2017, the Digital Accessibility Coordinator worked closely with DoITT to make accessibility enhancements to the following websites:

- [NYC Hope](#)
- [NYC Digital Blueprint](#)
- [Open Records](#)
- [Sandy Funding Tracker](#)
- [Lead Free NYC](#)
- [City Clerk](#)
- [MWBE](#)
- [Vision Zero](#)

#### **Enhancements:**

Enhancements to “non-templated” websites include:

- Alt-text for images (All)
- Properly formatted heading structures (All)
- Addition of ARIA Landmark Regions (Open Records, NYC Hope and Blueprint)
- Accessible accordions (NYC Hope and Open Records)
- Accessible search filters (NYC Hope and Open Records)
- Keyboard and screen reader focus shifting (NYC Hope)
- Color contrast enhancements (All)
- Use of accessible fonts (All)
- And more

## **Templated NYC.gov server-Hosted Websites**

NYC.gov server-hosted “templated” websites are composed of two main parts. The first part is the template with which each site is built. There are two types: the “old” and the “new” templates. The second part is the website’s content. The content is managed by IT professionals and communications personnel in each specific agency, and/or DoITT using a vendor-provided software product called TeamSite (version 7.3.2.0.0).

In the 2017 report, the following strategies were set to address accessibility for NYC.gov server-hosted websites:

- Make forms more accessible;
- Work with agencies to improve the accessibility of their website content and correct color contrast;
- Make accessibility enhancements to the “new” template;
- Transition all remaining “old” template websites to the “new” template; and
- Implement an accessibility accreditation process for all new websites.

## **Progress Implementing Strategies:**

In the last four years, the Digital Accessibility Coordinator and DoITT have made progress towards reaching these strategies. The sections that follow will outline these efforts.

### **Form Changes**

Since the 2017 report, the City of New York has made accessibility enhancements to at least 1144 forms on “new” template websites on NYC.gov. Between 2017 and 2019 524 forms were enhanced for accessibility. From 2019 to 2021, 620 forms were enhanced.

- **Agency Head/Commissioner Contact Forms:** DoITT set a goal to convert old-style agency head forms to the new-style agency head forms which are more accessible. This effort has been successful. Currently, all agencies that do not use their own customized contact form are using the one optimized for accessibility.
- **“Other” Existing Forms:** Another aim from the 2017 report is for DoITT to convert other existing forms to the new style. Between 2017 and 2019, 524 of those forms were converted. Since 2019, 620 of those forms were enhanced for accessibility. Since 2017, a total 1144 forms were enhanced for accessibility. Currently, all forms on the “New” template have been enhanced for accessibility.
- **“New” Forms:** DoITT will continue to include these enhancements to all “new” forms.

### **Content and Style Changes**

The 2017 report set a goal for MOPD and DoITT to create step-by-step guides for content creators that include instructions on how to add alt-text for images, improve color contrast, format headings properly, as well as caption and audio describe videos.

To realize this goal, DoITT created two websites to aid developers in creating accessible content. For web masters using our TeamSite templates, the Process website has specific guidance on using TeamSite to create Accessible Content. The [NYC Digital Blueprint](#) has more general guidance on creating accessible content and is available to the public.

Since 2019, MOPD has created a Digital Accessibility Resources section on their website. It contains an accessibility statement, a method to contact the Digital Accessibility Coordinator, guides on creating accessible digital products and information regarding the digital accessibility report. This website is publicly available for anyone's reference.

To compliment the Process website, DoITT created a training on creating accessible content using TeamSite. In the last four years, the web strategies team, which was trained on accessibility by the Digital Accessibility Coordinator, has been conducting these trainings. Between 2017 and 2019, 73 agencies were trained on TeamSite accessibility. Since 2019 until the date of this report, 30 additional trainings were conducted for 28 agencies. In some cases, agencies were trained more than once. For a list of City Agencies trained in creating accessible content on TeamSite, refer to Appendix 3: NYC Accessibility Enhancements.

### **New Template Changes**

In the previous reports, MOPD and DoITT had been examining the "new" template and its various forms and created a list of accessibility changes based on best practices.

In the past four years, the following enhancements have been applied to websites on the new template as they are updated:

- Added a new Translate button that is accessible on desktop and mobile
- Added a new search accordion that is accessible on desktop and mobile

- Added a "skip to main content" link at the top of the page
- Added a "main content" ARIA landmark region
- Created unique labels for primary and secondary navigation regions
- Added a footer region
- Added an <h1> heading to all pages at the beginning of the main content
- Added headings in primary and secondary navigation regions
- Added a label for navigation accordion on mobile
- Added keyboard visual focus for links
- On agency inside pages, screen readers recognize the "Share" module links, and the "Share" icons have alt text.
- Removed empty links from agency inside pages share module
- Resolved label issue with header and footer search
- Fixed contrast issue on footer
- Removed limitation on user zoom level
- Language tag was added to all pages
- Corrected h1 font size in mobile view
- Improved keyboard focus on focusable elements

This list of changes is gradually being implemented to websites using the new TeamSite template.

### **Transitioning from "Old" to "New" Template**

Since the last report, DoITT has made progress in phasing out websites using the "old" template. This template is outdated and does not support many accessibility features. Therefore, MOPD and DoITT have decided to focus their efforts on making enhancements to the "new" template. Testing of the "new" template shows that it has a higher level of accessibility. The process of transitioning websites using the "old" template to the "new" template was projected to be completed by the submission of the 2019 report. While not all the "old" template websites were converted, only four websites remain on that template. The remaining four websites are expected to be converted or phased out by the next report due in July of 2023.

## **Progress for Accessibility Accreditation Process**

Before a new website goes live on NYC.gov, it goes through a site review process at DoITT. As of May 10, 2017, the Digital Accessibility Coordinator is part of that process, ensuring that all new websites that the City creates using TeamSite are tested and enhanced for accessibility before launch or shortly thereafter.

The 2019 report set goals to officially document accessibility enhancements to a website as it goes live. The Digital Accessibility Coordinator has been using a process to log bugs and track progress of accessibility enhancements. The bug tracker tool is a spreadsheet. To check out the bug report template as well as bug reports from 2021, refer to Appendix 5.

## **Progress for Internal Websites**

The 2017 report also set goals to address internal websites and training modules. Focus on internal websites started in 2018.

The Digital Accessibility Coordinator has gathered a list of internal websites from City agencies. As of the 2021 report, 16 internal websites were counted. Internal websites that have been enhanced and will continue to be enhanced for accessibility include:

- [NYC Employee Self Service](#)
- [Citytime](#)
- Childcare Provider Portal (Administration for Children's Services)
- Medical Brain Dashboard (Administration of Children's Services)
- CAPS Online (Administration for Children's Services)

The Digital Accessibility Coordinator has also been working with the Department of Citywide Administrative Services (DCAS) to improve the accessibility of online training modules that all employees are mandated to complete. The Digital Accessibility coordinator identified accessibility enhancements for DCAS and their vendor to implement. The enhancements have been implemented to the Sexual Harassment and LGBTQ training

modules. They will also be applied to an upcoming Disability Awareness module. Changes include:

- Alt-text for images
- Audio description for videos
- Text labels for all navigational buttons and other interactable elements
- Use of accessible fonts
- High color contrast
- Keyboard access for all interactable content
- Enhancements to keyboard visual focus
- Transcripts for audio content
- Use of plain language

## **Progress for Outside-Hosted Websites**

The 2017 report set a goal for the Digital Accessibility Coordinator to work with vendors whenever possible to improve the accessibility of outside-hosted websites. As MOPD/DoITT are informed of new procurements, the Digital Accessibility Coordinator has tested and shared feedback with vendors.

In the past two years, the Digital Accessibility Coordinator has worked with various agencies and vendors on accessibility enhancements to outside-hosted websites. Some examples are below.

- [VAX4NYC](#)
- [Vaccine Finder](#)
- [External Vaccination Scheduler](#)
- [My Vaccine Record](#)

Changes include the items below:

- Added labels to buttons and other controls
- Enhanced selectable buttons so that they announce proper selected states with screen readers
- Enhanced pagination steps feedback for screen readers
- Enhanced focus management for screen readers and keyboard focus

- Enhanced color contrast for text and form fields
- Improved heading structures
- Improved text resizing and reflow

For a full list, refer to Appendix 5 bug reports.

## **Progress Summary for Outside-Hosted Websites**

Moving forward, the Digital Accessibility Coordinator will continue to work with agencies and vendors to enhance outside-hosted websites for accessibility. To ensure that future outside-hosted websites are accessible, the Digital Accessibility Coordinator will collaborate with DoITT and City Hall to include accessibility requirements in all website procurements.

## **Procurements**

Since 2017, the Digital Accessibility Coordinator has been sharing the following [Request for Proposal](#) (RFP) language with City agencies to be included in procurements of digital products. This language will be updated and circulated more widely for agency awareness between the 2019 and 2021 reports.

“In 2016 the City Council enacted [Local Law 26](#), which set a requirement for accessibility of City websites by adopting one of the two following standards:

- [The Web Content Accessibility Guidelines \(WCAG\) 2.0 Level AA Section 508](#) federal standards

For “Product name” we will be using [the Web Content Accessibility Guidelines \(WCAG\) 2.0 Level AA](#). This product must be compliant with WCAG 2.0 Level AA no later than the time of launch. The technology strategy and implementation by the software vendor must meet the standard. Of particular interest for technical implementation are screen reader compatibility, text resizing, color contrast, keyboard

accessibility, captioning and audio description for video content wherever applicable. The “Agency procuring” will coordinate accessibility testing with the Mayor’s Office for People with Disabilities (MOPD) during the design process and after launch. The vendor is responsible for working with “procurement agency” or MOPD during the design process and remediating any accessibility issues. Once the product is launched, the vendor is responsible for remediating any accessibility issues reported by MOPD within 90 days.”

## **Progress Reaching Other Goals**

The 2017 and 2019 reports report also set the goals listed below for setting policies. MOPD and DoITT have successfully implemented these policies internally. The next step is to guide and inform other agencies to adopt those policies. The policies live on the [MOPD Digital Accessibility Resources website](#) and [NYC Digital Blueprint](#) website for agencies to adopt and implement.

- Apply accessibility standards to Internal websites and training modules
  - Progress: Internal websites such as [CityTime](#), [Employee Self Service](#), [CAPS Online](#) and [Medical Brain Dashboard](#) have undergone accessibility enhancements and will continue to receive more enhancements.
- Create a long-term strategy for phasing out inaccessible legacy software and ensuring that all internal websites and digital products used and procured by the City of New York are accessible.
  - Progress: the Digital Accessibility Coordinator has been communicating with various agencies to inform them that their legacy software or website is not accessible and stressing the importance of including accessibility when replacing existing platforms.
  - Improve accessibility of online learning modules
  - [DCAS](#) has implemented accessibility enhancements to its Sexual Harassment and LGBTQ online training modules and will apply accessibility enhancements to an upcoming Disability Awareness Module.
  - [CCHR](#) released a [Sexual Harassment training](#) that is accessible and includes audio description.
- Produce a policy regarding Audio description and captioning for all video content released to the public

- Progress: MOPD has been audio describing all videos since 2016. Also, all agencies trained in accessibility are informed that this is legally required.
- MOPD has created specific guidance on how to make videos accessible. This guidance is available on the MOPD [Digital Accessibility Guides page](#).
- The following City agencies have created videos with audio description.
  - Department of Transportation
  - New York City Emergency Management
  - Taxi and Limousine Commission
  - Department of Health and Mental Hygiene
- Produce a plain language accessibility policy for City of New York agency websites
  - All digital accessibility trainings conducted by the Digital Accessibility Coordinator include plain language guidance.
  - MOPD has created guidance on making documents accessible that includes information on plain language requirements. It can be downloaded on the [MOPD Digital Accessibility Guides page](#).
- Produce an accessibility policy for electronic documents posted on City of New York agency websites
  - Progress: MOPD created guidance on making accessible documents that is available for download on the [MOPD Digital Accessibility Guides page](#).
  - MOPD continues to make its electronic documents accessible. They also support other agencies in the accessibility of their electronic and print documents.
    - MOPD supported NYC agencies in making 131 accessible electronic documents since July 2019
    - Documents such as [DOT Mobility Management 2021 report](#), [Accessible NYC 2020 edition](#), [Truth and Broadband Report](#) or the [Disability Legal Protections](#) guide.
- Produce an accessibility policy for Web apps and widgets on City agency websites
  - Progress: MOPD and DoITT have worked with agencies to make maps and other data visualizations accessible. Also, all agencies

- trained in accessibility are informed that all widgets, data visualizations and other add-ons must be accessible.
- 2023 goal: MOPD to craft a policy around this type of content and DoITT will post on NYC Digital Blueprint website.
  - Produce an accessibility policy for Mobile apps associated with City services
    - Progress: seven mobile apps have been enhanced for accessibility in the past two years.
    - Apps such as [Notify NYC](#), [311](#), [Advanced Warning System](#), [NYC Secure](#) and [NYC Medical Brain](#) have all been optimized for accessibility. An upcoming NYC Recovery for All app has also been enhanced for accessibility.
    - 2023 goal: MOPD to craft a policy for mobile app accessibility and DoITT will post to the NYC Digital Blueprint website.

## **Part 7: 2023 Goals**

In addition to the 2023 goals listed above, the goals below have also been set for the 2023 report.

### **Updated Standards**

It is expected that W3C will release an updated set of standards in the next two years. The standards that are on the way are [WCAG 2.2](#) and [WCAG 3.0](#). For the 2023 report, the City of New York will begin adopting one of those standards with full adoption by the 2025 report.

### **Digital Accessibility Portal**

In order to streamline the auditing and reporting process, the City of New York will be expanding the MOPD Digital Accessibility Resources website to create a portal. It will be a place for MOPD, DoITT and eventually other agencies to post their audits or bug reports. This website will act as a database of all audits as well as provide guidance for NYC agency professionals and the public.

Our testing methodology, survey spreadsheet and bug report template will be available on this website. The website will also contain the full breakdown of WCAG 2.1 Level AA scoring methodology and eventually WCAG auditing lessons in the form of video recordings.

The website will leverage the [NYC OpenData Portal](#) and its features to make the process of submitting audit surveys and bug reports convenient for City of New York employees. The tools will also enhance our ability to report on the state of accessibility and allow us to provide more complex observations regarding the audit data.

## **Part 8: Guides, Trainings, and Outreach**

The 2017 and 2019 reports set goals for the City of New York to make efforts to increase awareness within City agencies about Local Law 26, the WCAG guidelines, and the Web Accessibility Plan. These efforts included the following:

- Building relationships with City agency digital professionals that manage websites on behalf of their agency
- Creating accessibility best practices guides that will be shared with City agencies as well as the public; and
- Training City employees, content creators, TeamSite users, as well as vendors on how to make websites accessible.

### **Relationships**

The Digital Accessibility Coordinator has developed relationships with DOITT employees who set standards, manage templates, and create and approve new websites. It is through this effort that MOPD and DoITT have created the list of changes to make for the “new” template, issued the directive for transition, and develop the accreditation process.

In addition, the Web Strategies team has taken initiative to ensure accessibility in the past four years. After being trained by the Digital Accessibility Coordinator, the team has become knowledgeable on how to create accessible websites and has created a Process website as a resource. The Process website is available to City employees only and it covers how to create accessible content on TeamSite.

They have also created a training to aid folks who create content. The training focuses on creating accessible content using TeamSite. In the past two years, they have trained 28 agencies. For a list of all agencies trained, refer to Appendix 3: NYC Accessibility Enhancements.

## **MOPD Digital Accessibility Resources**

Since 2019, The Mayor's Office for People with Disabilities added a [Digital Accessibility Resources](#) section on their website. It contains a few pages and includes the following:

- [An accessibility Statement](#)
- [Contact the Digital Accessibility Coordinator page](#)
- [Digital Accessibility Guides](#)
- [Digital Inclusion Conference](#)

The [Digital Accessibility Guides page](#) has updated and new guides including:

- [Accessible Social media Guide](#)
- [Accessible Documents Guide](#)
- [Accessible Slide decks Guide](#)
- [Audio Description and Captions Guide](#)
- [Accessible Virtual Meetings Guide](#)

## **NYC Digital Blueprint**

Since the 2017 report, DoITT and other agencies created the [NYC Digital Blueprint](#). In the 2017 report, it was referred to as the NYC Digital Resource Hub. It is a general guide on how to create websites and has a section dedicated to [accessibility](#). It also has a downloadable [Digital Accessibility](#)

[Toolkit](#) to assist content creators in making their digital content accessible. Since 2019, some of the content has been updated and the following new items were added.

- [Screen Reader Testing Guide](#)
- [Accessible Virtual Meetings Guide](#)

## **Conferences and Trainings**

There have been many efforts by the Digital Accessibility Coordinator to build a culture of accessibility inside and outside City government through trainings, conferences and a digital inclusion group for City professionals as well as the public. The following sections contain more details.

### **Trainings for the Public**

The Digital Accessibility Coordinator creates programming for the public to increase awareness of digital accessibility. Some events held for the public include:

- Accessible Virtual Meetings and Events
- Accessible Outreach and Communications
- Cyber Security for People with Disabilities Training
- How to make data accessible training
- Auditing websites with a screen reader

### **Internal Trainings**

Trainings have been conducted by the Digital Accessibility Coordinator and the Web Strategies team at DoITT. Since 2019, The Digital Accessibility Coordinator trained 21 agencies and the Web Strategies Team has trained 28 agencies. Since 2017, at least 73 agencies have had some kind of training in creating accessible digital content. Note: some agencies were trained both by the Digital Accessibility Coordinator and the Web Strategies Team. Sometimes more than once by each.

For a full list of agencies trained by the Digital Accessibility Coordinator and DoITT, refer to Appendix 3: NYC Accessibility Enhancements.

## **Trainings Conducted by the Digital Accessibility Coordinator**

The trainings that the Digital Accessibility Coordinator conducts are usually one to two hours long and are meant to introduce the topic of digital accessibility, share best practices, build empathy, and demonstrate accessible and inaccessible digital content. The trainings are customized to meet the needs of each specific agency. Note: many agencies were trained more than once. There are five different trainings. Below is a description for each of the trainings.

### **Intro to Digital Accessibility:**

Description:

What you need to know to start making your digital content accessible. Do you create or manage websites, electronic documents, mobile apps, social media posts or videos? Find out how you could be reaching a wider and more diverse audience by making your content accessible to all. Topics include:

- What is Digital Accessibility and who is it for
- Intro to Assistive Technology
- WCAG 2.1 Level AA standard
- Making images accessible
- Intro to Website accessibility
- Intro to document and PowerPoint accessibility
- Intro to social media accessibility
- Intro to video accessibility
- And more...

Who is it for?

All digital professionals: developers, designers, marketing, communications, social media, content creators etc.

## **Accessible Virtual Meetings and Events Training**

### Description

Similar to the accessible outreach training, the accessible virtual meetings training prepares attendees to organize an accessible online event. It covers topics including:

- Choosing an accessible virtual platform
- Promoting the event using accessible communication methods
- Adding accessibility info in advertisements including a way to request accommodations
- Hiring accessibility professionals such as interpreters, captioners and describers
- Setting up technology and conducting test runs
- Expectations of presenters
- Starting your meetings and events with an access check
- Best practices around audience participation and managing presenters

Who is it for?

Event planners, marketing and communication professionals

## **Accessible Outreach:**

### Description:

Geared towards marketing and communications professionals, this training is aimed at teaching attendees how to communicate effectively with people with disabilities. It also covers how to plan an accessible event from start to finish. Topics include:

- Creating accessible flyers and electronic documents
- Creating accessible slide decks
- Accessible event pages and registrations
  - Advertising your accessibility features
- Setting up accommodations and hiring access workers
- Creating accessible print documents

- Creating accessible emails
- Creating accessible social media posts
- Creating accessible videos
- How to present with accessibility in mind

Who is it for?

Anyone who does outreach or communications: marketing, communications, content creators, designers, social media managers, event planners, presenters etc.

### **Video Accessibility Training:**

Description:

How to make your videos accessible to folks who are blind or deaf. Learn about captions and audio descriptions. Captions make sound accessible by adding text on screen that captures dialogue, sound effects and music for deaf audiences. Audio descriptions make visual content accessible to blind audiences by using an audio track to describe the setting for each scene, introducing characters, reading on-screen text and describing visual events that are important to the plot. Training includes:

- Introduction to open/closed Captions and Audio descriptions
- Good examples of captions and audio descriptions
- The difference between open captions and closed captions
- Designing your captions for accessibility: i.e. fonts, font sizes, color contrast
- How to write a script for audio description
- Tips for recording and editing your audio description
- How to describe different types of videos. i.e. a news report, an art performance, a sports event, or a live show

Who is it for?

Anyone who works with videos: editors, writers, producers, directors, journalists etc.

## **Screen reader testing training**

Description:

An in-depth training on how to use screen readers and automated tools to test your website for accessibility. Topics include:

- Intro to screen readers
- Commonly used screen reader shortcuts
- How screen reader users typically navigate websites
- Testing images
- Testing heading structures
- Testing forms
- Testing maps
- Testing video players
- Using WAVE to test for color contrast, document language, document title, form labels and more

Who is it for?

Anyone who manages websites: Developers, programmers, content creators, web designers, accessibility testers, quality assurance etc.

## **Trainings Conducted by DoITT**

The Web Strategies team at DoITT has also been training agencies on creating accessible content using TeamSite. Since the 2017 report, DoITT has given this training to 73 agencies. The trainings cover some of the following:

- Accessible heading structures
- Alt-text for images
- Page titles
- Unique link text
- Proper use of tables
- Color contrast
- Building accessible forms
- And more

For a full list of agencies trained by the Web Strategies team refer to Appendix 3: NYC Accessibility Enhancements

## **Digital Inclusion Conference (DICON)**

In 2018, 2019 and 2021 the City of New York organized conferences on the topic of digital inclusion and accessibility. The conferences were aimed at teaching City employees and members of the public to learn about how to create accessible and inclusive content. Below are some more details.

### **Conference 2018:**

On May 17, 2018 MOPD and the NYC Office of the CTO were the lead agencies in organizing a [conference on digital inclusion and accessibility](#). It was also Global Accessibility Awareness Day. The planning committee included members from more than ten different City agencies. The conference was attended by around 200 City government employees.

Topics covered include:

- Creating accessible multimedia content
- Accessibility for older adults
- WCAG 2.1
- Affordable auditing tools
- [View the schedule here](#)

As part of this conference, the City of New York also released a [Digital Accessibility Toolkit](#) that contains guidance on accessible web design, accessible documents and presentations, as well as accessible videos and social media posts.

### **Conference 2019:**

On May 16, 2019 MOPD and the Mayor's Office on Creative Communications organized the second annual conference on digital inclusion called [DICON](#). This was a one-day event and was open to the public. The focus was creating accessible content, assistive technology and art, as well as data and privacy. About 70 City government employees and 70 members of the public attended the event which was [live streamed and recorded](#) to reach a wider audience.

The conference featured well-known assistive technology vendors, digital accessibility auditing companies, and one-on-one advice sessions with accessibility experts. View the [full schedule](#) for more info.

### **Conference 2021**

On May 20, 2021 The [NYC Mayor's Office for People with Disabilities](#) and [Disability Unite](#) organized [DiCon 2021](#). A one-day virtual conference to assist small businesses, cultural institutions and artists in getting started with their digital accessibility. The day long event covered the following:

- Choosing an accessible platform or template for your website
- How to maintain the accessibility of your website
- Creating accessible social media posts, emails, documents and email blasts.
- Creating accessible videos

Attendees also had the opportunity to schedule a 20 minute consultation appointment with an accessibility expert to get started.

### **Agency Accessibility Self Audit Training Series**

Between 2015 and 2018, the Digital Accessibility Coordinator created an internal working group for City employees called Digital Inclusion Committee which shared information and encouraged City employees to adopt more accessible practices. Since then, the project has transformed into a self audit training series.

The self audit training series was aimed at getting digital professionals working in City agencies to audit their own websites for accessibility. 66 participants from 15 City agencies attended the seven sessions.

The training series were held from January to June in 2021. Each of the sessions were held a few weeks apart and lasted from one to two hours each.

In each session, five to ten WCAG criteria were covered and broken down into the following:

- A description of each criterion
- When to test for each criterion
- How to test for each criterion
- How to measure and score the testing results for each criteria

At the end of the training series, we had engaged with five agencies who completed one audit each. Those agencies are:

- Administration for Children's Services
- Department of Health and Mental Hygiene
- Housing Preservation and Development
- The Mayor's Office of Contract Services
- The Mayor's Office of Media and Entertainment

Four of the audits were reviewed by the Digital Accessibility Coordinator and are included in Appendix 1.

## **Conclusion**

In the last four years, a formidable effort has been put into auditing websites, applying accessibility enhancements, creating guidance materials, conducting numerous trainings, and organizing conferences to get City employees excited about accessibility. We believe that these efforts are making a big impact on reaching the goal of making all of the digital Assets of the City of New York accessible to people with disabilities. Moving forward, we plan to setup a process where all websites tested for accessibility are fully audited and have an audit report on the Digital Accessibility Portal.