The following is a response to the Nondiscrimination on the Basis of Disability; Accessibility of Web Information and Services of State and Local Government Entities SANPRM by WebAIM. WebAIM (Web Accessibility in Mind) is a non-profit web accessibility consultancy based at the Center for Persons with Disabilities at Utah State University. We have provided web accessibility expertise and resources since 1999. Staff members contributing to this response have a combined 45 years' experience in the web accessibility field.

II. Request for Public Comment

A. The Meaning of "Web Content"

Question 1

WebAIM agrees that the proposed definition does indeed capture what is contained in WCAG 2.0's definition of "web content", though additional clarity within the requirements (particularly) regarding "other software" will be necessary to ensure the scope of the requirements is well understood.

Additionally, it must be clarified that "web content" is not limited to publicly available content, but also applies to password-protection content and functionality, as well as internal/intranet content and functionality.

B. Access Requirements to Apply to Web Sites and Web Content of Public Entities

1. Standards for Web Access

Question 2

Non-discrimination in a digital age requires standards that transform across the reality of how technologies are, and will be, used. It is WebAIM's view that conformance to WCAG 2.0 Level A and Level AA Success Criteria and Conformance Requirements should be the standard that defines web accessibility under the ADA.

This set of international guidelines is already being implemented in many places. It is the standard benchmark of minimal accessibility in development and regulatory arenas throughout the world. Referencing WCAG 2.0 directly has the benefit of harmonization with other guidelines (e.g., Section 508) and the vast amount of resources available for learning, implementing, and evaluating to these guidelines.

2. Timeframe for Compliance

Question 3

WebAIM agrees that a 2-year timeframe from the publication of a final rule strikes a balance between stakeholder interests. However, due to the complexities and effort required to meet full WCAG A/AA conformance in some limited instances, we would

recommend the addition of an optional transition plan be added to regulation. This transition plan option would add up to one additional year to the timeframe and would, if invoked, bind the entity to the plan. Not all entities would wish to invoke such a plan, however, if used, the presence of an accessibility transition plan would provide a safe harbor for the time allowed.

WebAIM would recommend the following 5 elements of a transition plan: (1) If a transition plan will be used, it must be posted within 1 year of the publication of a final rule; (2) This plan must be announced prominently on the covered web site, (3) The transition plan itself and mechanisms for accessing such plan must conform to the final accessibility standard; (4) It must contain measureable goals with effective dates for each goal, not to exceed one additional year; and (5) it must provide detailed plans on how it will provide accommodations in a reasonable timeframe on request during the transition period. As mentioned before, the entity would then be bound to this plan as written.

Such plans are currently being implemented under OCR complaint processes (particularly with educational entities) with great success. These are not unlike the transition plans enacted during the initial ADA promulgation. Such plans allow a more formalized process for meeting WCAG 2.0 A/AA, especially in instances where full conformance is not readily achievable. For example, WebAIM is currently engaged with large corporate clients and higher education entities who have been undergoing their efforts for more than two years. While it could be argued that capping the timelines would create urgency to complete accessibility transformation, however, it is not just the web content that will need to be altered. New procurement practices, hiring protocols, staff training, web/course content management systems (many of which are under multi-year contracts), and systems of monitoring will need to be created, implemented, and evaluated - and these take time to implement.

Since most websites are currently on about a 2- to 3-year cycle, providing a mechanism for thoughtful rollout, while simultaneously providing accommodation should allow providers adequate time to bring their existing content into compliance or make decisions to alter the timelines on which their web content will be refreshed. It should be stressed that this timeframe is consistent with what WebAIM is seeing in the field. Many entities can accomplish this work within 2 years, and some would find the 2-year deadline very difficult, no matter their effort.

Question 4

While we agree that there is a need for more accessibility professionals, this timeframe would create a market-driven need for them, something that is sorely

needed today. It is the opinion of WebAIM that personnel could obtain the needed skills within the first year after the publication of the final rule. The majority of existing technical professionals could receive the needed education to become skilled in the first year. In fact, the presence of a transition plan would allow entities to acknowledge the need to retool employees and accomplish this in a reasonable timeframe without significantly altering delivery dates of accessible web content.

C. Alternative Requirements

1. Small Public Entities

Question 10 - Question 15

The complexity and cost of accessibility generally scales well with the size, complexity, and cost of the website - in other words, smaller entities with smaller and less complex web sites will face a smaller burden in implementing accessibility. WebAIM therefore believes it best to promulgate one standard for everyone. Furthermore, we believe that the rule on live audio content should be the same for all entities (see Questions 5-7 above). Allowing all entities 2 years (plus the possibility of an added 1-year transition plan option as documented above) harmonizes the rule and reduces confusion of entities that cross "size" barriers within the timeframe. The transition plan option acknowledge that some entities may need additional time to come into conformance.

Users with disabilities should not be further marginalized because they live in rural or remote locations. Moreover, if an entity has any web presence, it either has the skill to make that presence conform to the standard, or it has purchased goods or services which could, within a 2-year timeframe, be made accessible, if they are not already. With that said we do recognize the possibility that this rule could hit small entities a bit harder.

2. Special Districts

Question 17 - Question 19

WebAIM believes that, like small public entities above, special district governments should conform to the same rule as other entities on the same timeline.

III. Exceptions to the Web Access Requirements

A. Archived Web Content

Question 20

Yes.

Question 21

We believe that some entities may simply declare and indicate important content as being archival, thus significantly barring individuals with disabilities from engaging with content and functionality which may be part of an educational or employment requirement. It could also impose a barrier for personal inquiry. However, we also realize the significant burden that entities may face making all truly archival content accessible. We propose that any content identified as being archival must also provide a mechanism whereby users may request that the content be made accessible (or an accessible version be provided) and that such accessible content must be provided in a reasonable timeframe.

4. Third-Party Social Media Platforms

Question 37 - Question 38

Certainly social media is used extensively by entities covered by title II of the ADA. For example, a university will use Facebook to keep the student body connected to issues facing the campus community. Some small entities have no or very limited web presence beyond a Facebook page. Twitter is used by court systems to send out announced rulings. Social media is used to publicize critical information, such as meeting notices, school closures, and emergency notifications. Social media activity may be required in a course curriculum. It would be difficult to except the use of accessible social media under title II when such usage impacts services, programs, and activities. With that said, it will be preferable to have unified messaging around the accessibility of social media writ large. However, we believe this could be handled now rather than waiting.

D. Password-Protected Web Content of Public Educational Institutions

Question 39

We are unaware of standardized ways in which public educational institutions use password protected sites. If implemented as suggested, “a timely manner” must require a very short turnaround for delivery of accessible content. It is of note that such accommodations are typically not optimal, and are, ironically, often more expensive than simply making the content natively accessible to begin with.

It is our strong opinion that password protect content not be excepted and that the presence of individuals with disabilities should not be a metric for determining applicability of these requirements. It should be an expectation of a tax-paying citizen that the web content is accessible to them on day one, as it is for an individual without a disability. Anything different will further marginalize such populations.

If the Department considers defining effective dates to be 2 years out from regulation, why then wouldn't the entity have 2 years under this provision? During the physical changes to the built environment post 1990, it would have been ridiculous for regulation to flow to only those buildings where individuals with disabilities were in attendance, and how could they attend if accessibility were not already provided? For example, in 1988 individuals in wheelchairs were not able to ride inaccessible busses. Under the logic proposed here, such busses would have been exempt from regulation. There was recognition then, and there should be recognition now, that individuals with disabilities can show up at any time, in any location - especially for online activities.

WebAIM is aware that students with disabilities seek out those institutions that ARE accessible now, and align many decisions with the access that will be required for them. Excluding educational entities from statutory compliance when they do not have these students, parents, or others, will further exacerbate the problem, and functionally reduce choice and self-determination for the very population that is vulnerable.

Question 41

Due to the real-time nature of online learning, it is not reasonable to allow any delay for students with disabilities to be provided the course content available to their peers.

Question 42

Some do, many don't. Again, password protected sites in education are not uniform. The nature of the content does not change simply because it is behind a password. This is not a helpful way to define what should or should not be made accessible.

Question 45

We are not aware of specific procedures for notification, but we are concerned by the idea that such a notification would trigger a process for addressing accessibility deficits in existing web materials. When a new student without disabilities enrolls in a course, the provisioning of materials is merely a matter of distribution. Conversely, this question seems to imply that an "ad hoc" process for developing accessible web materials may be acceptable. Our experience has been that this is rarely the case for online course content.

Students with disabilities must generally register with a disability services office in order to be eligible for accommodations. This event may or may not occur in connection with registering for a specific course. Student course schedules are often

not known until immediately before course activity begins - and students may generally change their schedule up to several weeks into the course (a further indication that institutions believe that students should be well-engaged in the course content early, as opposed to being provided that content via accommodation later). A growing trend towards open enrollment creates a continuous stream of enrollments that would be extremely difficult to track.

As such, all content should be accessible to students with disabilities at the earliest time when course materials are made available. Students with disabilities must not be limited to particular courses or delivery mechanisms (in-class vs. online), or be required to meet more stringent registration timing requirements.

Question 46

WebAIM would hope that the Department is not viewing the time between when a student registers and when course work must be accessible as a factor in deciding if content should be made accessible. While these are traditional time markers, the district and school has complete control over when to register students. Accessibility requirements should not promote a separate registration process or timelines for students with disabilities. As in post-secondary education, because of the increased reliance on online content in elementary and secondary education, such content must be made accessible to them at the time it is provided to all students, not via an ad-hoc, untimely, and/or inequivalent process.

IV. Conforming Alternate Versions

B. Providing Access to Conventional Electronic Documents

Question 48

Yes. However, our experience has shown that alternative versions are very often misunderstood and are often implemented as the first defense against conformance as opposed to a true fallback. We recommend that the wording be changed to prohibit the use of alternate versions except in the 2 circumstances noted. Such wording would increase understanding that the primary version should be accessible when possible.

Question 50

We strongly suggest that it be required and defined that conforming alternate versions meet the W3C requirements for a conforming alternate version (https://www.w3.org/TR/UNDERSTANDING-WCAG20/conformance.html#uc-conforming-alt-versions-head):

1. conforms at the designated level, and

2. provides all of the same information and functionality in the same human language, and

3. is as up to date as the non-conforming content, and

4. for which at least one of the following is true:

    1. the conforming version can be reached from the non-conforming page via an accessibility-supported mechanism, or

    2. the non-conforming version can only be reached from the conforming version, or

    3. the non-conforming version can only be reached from a conforming page that also provides a mechanism to reach the conforming version

As with our response to Question 48, such requirements will better support native accessibility of content, and will better ensure end user access to conforming alternatives when they are necessary.

Question 51

This is a difficult question. WebAIM always advocates for a single conforming version when possible–most electronic documents can and should be made natively accessible. However, the consensus within our group is that additional considerations are reasonable.

We share the concern that this could subject individuals with disabilities to different or inferior services or content, but the reverse of this is also true. In our experience, there are times when a conforming alternate version may provide a better overall experience for users with disabilities than a conforming electronic document. A common real-world example would be a complex PDF file that could be made technically “conformant”, or an HTML “conforming alternative” (generally created at a lower cost). While it might seem suboptimal to provide two versions, the HTML alternative often provides a more accessible overall experience for many users with disabilities, especially screen reader users. You could argue that the ideal should be a conforming electronic document and web page, but this ideal does not reflect reality.

VI. Additional Issues for Public Comment

A. Measuring Compliance

Question 52

WCAG 2.0 conformance is often subjective (e.g., equivalent alternative text for an image may be defined differently by two people). While Level A and Level AA guidelines are based partially on end user impact, the level of impact does not map directly to level assignment (e.g., a decorative image with missing alternative text - a Level A failures - has at most a negligible impact on the end user experience, whereas missing focus indicators - a Level AA failure - renders a web page nearly entirely inaccessible to a sighted keyboard user). Some WCAG failures (such as a 4.1.1 validation issue that does not impact accessibility) may have no or very minimal end user impact.

There is no quantifiable method that we are aware of for determining a threshold for or percentage of WCAG compliance (excepting the Level A and AA differentiations). Any such method would naturally exclude a measure of end user impact. As such, we do not recommend a percentage threshold - or that WCAG levels be used in this way. At the same time, we do recognize that some minor failures would be WCAG/ADA failures while having no or negligible end user impact. In cases where subjectivity or interpretation of WCAG guidelines results in a claim of inaccessibility, the burden should be on the claimant to demonstrate actual end user impact related to access to services, programs, and activities. Results of an automated report of machine-discovered errors, for example, may not be sufficient.

B. Mobile Applications

Question 53

Yes, the Department should adopt accessibility requirements for mobile applications. Such a requirement would also harmonize with proposed Section 508 requirements. As our society becomes increasingly mobile, accessibility of those platforms and applications is crucial so that individuals with disabilities do not experience discrimination in programs, services, and activities.

Question 54

We recommend the first proposed option be implemented - to “apply WCAG 2.0 Level AA to mobile apps of public entities as is being proposed by the Access Board in its update to the section 508 standards.” The technical standard that is selected here should harmonize with Section 508 (especially since Section 508 addresses accessibility of Electronic and Information Technology, and not just web content). WCAG 2.0 Level AA is a very suitable proposed standard.

Although UAAG 2.0, ATAG 2.0, can also be useful resources when considering mobile accessibility, they are not acceptable standards for most mobile content. That is not their purpose. As outlined on the WAI page for mobile accessibility (https://www.w3.org/WAI/mobile/) "UAAG (User Agent Accessibility Guidelines) covers web browsers and other 'user agents', including mobile browsers. " and "ATAG (Authoring Tool Accessibility Guidelines) covers software used to create web pages and applications, including for mobile."

While we are not very familiar with the ANSI/HFES 200 Human Factors Engineering of Software User Interfaces, there are two concerns with their use. First, having been published in 2006 (and approved in 2008), they predate modern concepts and techniques for mobile application accessibility. Second, based on the link provided in the SANPRM, it appears that the full standard is only available for a price of $200, making it less available than an open standard like WCAG 2.0.

C. Benefits and Costs of Web Access Regulations

1. Web Accessibility Benefits

a. Benefits for People with Disabilities

Question 57

Potential participants in online education

We have seen dramatic growth in online high school and bachelor's programs. Web-based education has enable people to overcome barriers such as:

- Distance from brick and mortar classrooms
- Traditional course times that conflict with full-time work, childcare, and other responsibilities

We have specific and consistent anecdotal evidence that persons with disabilities have not benefited equally from online education. We understand that such information is not appropriate in this context, and therefore we have not included it. We could not find published data with estimates of the impact of inaccessible web materials on the participation of persons with disabilities in these online opportunities.

We do believe that it is important to provide some estimate of the potential deficit of persons with disabilities enrolled in online programs. As a starting point we offer the following information on the deficit of persons with disabilities undergraduate enrollees, when compared to persons without disabilities, in 2015:

- **Up to 23.2 million persons with disabilities** could have been enrolled as undergraduates.

This figure was calculated as follows:

- The National Center for Education Statistics reports that in 2011 – 2012:
    - 11% of undergraduate enrollees were persons with a disability
- The deficit of persons with disabilities enrolled as undergraduates is therefore:
    - Potential pool: 12.6 % of 20M = 25.2 million
    - Actual attendees: 11% of 17M (2014) = 1.87 million
    - Potential deficit: 23.3 million
- Resources
    - NCES:
        - 2012: http://nces.ed.gov/pubs2006/2006084.pdf
        - 2014: http://nces.ed.gov/programs/coe/indicator_cha.asp

Deficits in educational attainment

Online educational opportunities have the potential to address significant deficits in educational attainment among persons with disabilities:

- An additional **2.52 million persons with disabilities** should have completed **high school**, when compared to the high school completion rates of persons without disabilities
- An additional **4.55 million persons with disabilities** should have completed a **bachelor's degree**, when compared to the bachelor's degree completion rates of persons without disabilities

The following statistics were used to calculate these deficits in educational attainment that exist among people with disabilities:

- Cornell University's Disability Statistics website reports that in 2014:
    - The percentage of people age 21 to 64 in the US with a disability: 12.6%

    - The number of people age 21 to 64 in the US with a disability: 12.6% of 200 million = 25.2 million

- The Bureau of Labor Statistics reports that in 2015, people age 25 and older:
    - High school completion rates:
        - People without a disability: 90%
        - People with a disability: 80%
    - Bachelor's degree completion rates:
        - People without a disability: 34.6%
        - People with a disability: 16.4%
- The deficits in educational attainment of persons with disabilities:
    - High school:
        - 10% (differential in completion rates) of 25M = **2.52 million**
    - Bachelor's degree:
        - 18.2% of 25M = **4.55 million**
- References
    - Cornell University Disability Statistics: http://disabilitystatistics.org/reports/2014/English/HTML/report2014.cfm?fips=2000000&html_year=2014&subButton=Get+HTML
    - Bureau of Labor Statistics: http://www.bls.gov/opub/ted/2015/people-with-a-disability-less-likely-to-have-completed-a-bachelors-degree.htm

b. Benefits of Web Usage

Question 69

Deficits in educational attainment

As addressed in Question 57, persons with disabilities experience significant deficits in educational attainment, when compared to persons without a disability:

- An additional **2.52 million persons with disabilities** should have completed **high school**
- An additional **4.55 million persons with disabilities** should have completed a **bachelor's degree**

Potential loss of wages

The economic impact of the deficit in education among persons with disabilities is:

- **Each year up to $24 billion dollars in wages** could be earned by an addition 2.52 million additional persons with disabilities completing high school
- **Each year up to $127 billion dollars in wages** could be earned by 4.55 million persons with disabilities completing a bachelor's degree

To quantify the potential amount of lost wages due to the deficit in educational obtainment, the differential in average hourly wages for an individual (according to the amount of education she or he has) was applied to the figures cited above:

- The Bureau of Labor Statistics reported the following hourly wages, according to education level, for June 2016:
    - No high school: $12.47
    - High school: $17.25
    - Bachelor's degree: $31.22
- The economic impact of the deficit in educational attainment is:
    - High school: loss of $4.78 or $9,560 annually
    - Bachelor's degree: loss of $13.97/hour or $27,940 annually
- Resources:
    - Bureau of Labor Statistics: http://www.bls.gov/news.release/pdf/wkyeng.pdf

Question 70

WebAIM will limit remarks to the postsecondary setting, where we have had more experience. The Department of Education does not request information from postsecondary institutions regarding graduation rates of individuals with disabilities (although they do request this along other lines such as gender and race). Thus, institutions do not formally collect, or report such information. Self-advocates with disabilities report that it does indeed affect their learning outcomes (i.e., see web accessibility videos with individuals with disabilities reporting their experiences). Office of Civil Rights complaint letters and Court documents also reveal that individuals with disabilities report that the inaccessibility of web content has a

negative affect not only on their learning outcomes, but on completion of degrees and certificates as well.

c. Benefits of WCAG 2.0 Level AA

Question 71

Focus Visible (WCAG SC 2.4.7) is a success criterion that is often not implemented in web content, but that we have found has a notable impact upon many users with various disabilities, including keyboard users without disabilities.

Question 72

We recommend that descriptive transcripts be required for ADA compliance for multimedia, and that audio descriptions *not* be required for ADA compliance.

WCAG requires audio descriptions for multimedia at Level AA (WCAG SC 1.2.5). Audio descriptions are difficult and costly for media authors to implement. Descriptive transcripts (aka, “alternatives for time-based media” in WCAG parlance), however, are not required for some media until Level AAA (WCAG SC 1.2.8). Transcripts are generally readily available - particularly because they are required in order to provide captions at Level A. Providing audio descriptions but not transcripts negates the needs of users with deaf-blindness as well as users with some cognitive disabilities who cannot readily access the audio and/or visual components of media. Additionally, some screen reader users may prefer accessing a descriptive transcript over listening to audio description. The W3C has acknowledged these notable issues and has discussed addressing them in future versions of WCAG. It is of note that because of these issues that audio descriptions were excluded from AODA technical requirements.

Favoring transcripts over audio description (e.g., swapping the SC 1.2.5 Level AA audio description requirement and the SC 1.2.8 Level AAA transcript requirement) will result in a better end user experience while minimizing the cost and difficulty for content authors and providers.

d. Benefits to Other Individuals and Entities

Question 73

While WebAIM is not aware of any data sources helpful to answer this question, it seems logical that public entities resources would be used in accessibility efforts would be helpful in lessening other demands, such as staffing. Providing accommodations and technical support is costly, but necessary under the law. Native accessibility removes much of the need for such expensive staffing efforts.

Question 74

Certainly accessible web content has a positive impact on individuals without disabilities. For example, captions are routinely used by those who view video in quiet locations without headphones. They are also used by students as a study aid since the captioning can be searched, and also provides opportunities for multi-modal learning. Speech output of text can assist second language learners, and is useful in early literacy learning too. Speech output is helpful in environments where hands free use is required (i.e., in a car), or situations where the screen cannot be the primary method for interpreting content output. Of course accessible web content is important for senior citizens, but let us remember that this group acquires disabilities with advancing age, thus they may fall into the primary category of those with disabilities

3. Methods of Compliance with Web Accessibility Requirements

Question 84

In a HubSpot blog, 57% of 6,000 companies surveyed had plans to redesign their websites within the coming year. While conventional wisdom suggests that websites are redesigned in 2-3 year cycles, there may not be a data source for this assertion.

5. Indirect Costs Associated with Compliance

Question 94

The reality of what is occurring nationwide will confound answers to this question. It may not be possible to estimate a no-action baseline. That is because many entities elected to create policies and enact implementation plans because it was widely believed -- based on published materials from DOJ, the White House, and the Department of Education -- that the ADA *did* include the internet in places of public accommodation and would provide regulatory clarification. It will be impossible to determine how many of those entities would have done so had they believed that this would not at some point end up in regulation. Moreover, any baseline obtained now will necessarily contain early adopters who value inclusion in civil society for individuals with disabilities. Those data cannot be extrapolated in any meaningful way into the future, or into other sectors or entities who have web content now in inaccessible forms.

11. Public Educational Institutions

Question 113

Each sector of society has different costs associated with an accessible web, but this is consistent with how the web is used in each sector. For example, a local physical store may only use the web site for marketing and information (i.e., hours of

operation, location, dates of a sale), whereas a local government may use a web site to also register users for critical services (e.g., trash pickup). Many large companies also engage in online retail sale and customer service. In many ways, public education combines many of these because they engage across functions (i.e., provide information, allow or require online registration, enable online ticket and book sales). Their use of an LMS in many ways streamlines the process to create hundreds of thousands of web pages. If their cost was not appropriate to the benefit, they would not purchase an LMS, yet tens of thousands of them do this nationwide. Moreover, vendors are already producing LMS products that are largely accessible. It is not anticipated that extra costs would be incurred by public education to conform to this requirement due to an LMS. There is recognition that the LMS vendors will continue in their market-driven battle to capture a larger share of public education. The fact that web accessibility is part of what is driving innovation is seen as a good thing.

12. Impact on Small Entities

Question 116

We are not aware of data to support a response to this question. However, in our experience, even very small entities typically have web content available for their constituents. For example one WebAIM staff member lives in a community (Nibley, Utah) with a population reported in 2015 to be under 6,000 and they have a web site. Another lives in a community (Smithfield, Utah) with a population reported in 2015 to be around 10,500 and they have a web site. Another community (Mendon, Utah) in 2015 reported a population of 1,282 and they also have a web site. In the rural and remote areas in Utah, most small communities do in fact have web sites for their citizens.

Question 117

Of course an entity with fewer functions will not need to have a site as large as an entity with broader required functions. In our experience, it is the ways (i.e., functions) in which an entity provides a service over the web that will define the complexity, rather than the size of the entity. Please take a moment to look at the sites linked in question 116. There you will see an array of web content, not much different than many larger cities.

Question 119

We are unaware of data that should be considered. With that said, it is not our opinion that this is an effective measure of the burden. Functions define the burden, not revenue. While they may be tied in other contexts, the fact is that in a small

community the local governments have a greater burden all around to provide good service to their community.