

INITIAL REGULATORY ASSESSMENT
AND
INITIAL REGULATORY FLEXIBILITY ANALYSIS

NOTICE OF PROPOSED RULEMAKING
NONDISCRIMINATION ON THE BASIS OF DISABILITY BY PUBLIC
ACCOMMODATIONS—MOVIE THEATERS (TITLE III) -
MOVIE CAPTIONING AND AUDIO DESCRIPTION

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Executive Summary

The Department of Justice (“Department”) has prepared this Initial Regulatory Assessment (“Initial RA”) to assess the costs and benefits of its Notice of Proposed Rulemaking concerning movie captioning and audio description (“DOJ Movie NPRM”). This proposed rule, which is being issued in order to amend the Department’s existing title III ADA regulation, is proposing to explicitly require movie theaters to exhibit movies with closed captioning and audio description at all times and for all showings whenever movies are produced, distributed, or otherwise made available with captioning and audio description unless to do so would result in an undue burden or fundamental alteration. The Department is also proposing to explicitly require movie theaters to have a certain number of closed captioning devices and audio description listening devices unless to do so would result in an undue burden or fundamental alteration. The Department is proposing a six month compliance date for digital movie screens and is seeking public comment on two options for analog screens: Option 1, a four-year compliance date for analog movie screens, or Option 2, a deferral of rulemaking on analog screens until a later date.

The proposed regulation explicitly addresses equity and fairness considerations as provided under the Americans with Disabilities Act (ADA). Foremost among the expected benefits from the proposed regulation is the ability of a greater number of individuals who are deaf or hard of hearing or are blind or have low vision to better understand what is being said and shown at movie theaters so that they may fully and equally participate in the movie-going experience to the same extent as those without these disabilities. While some theaters do provide captioning and audio description to their patrons, many do not, creating a barrier for persons with disabilities to take part in the social and cultural movie-going experience.

The Initial RA provides estimates of the total cost of the rule under Option 1 (a six-month compliance date for digital screens and a four-year compliance date for analog screens) and Option 2 (a six-month compliance date for digital screens and a deferral of new regulatory requirements on analog screens) over a 15-year time horizon. Both options include the same requirements for digital screens. Under Option 1, we estimate that the cost of the rule will range from \$177.8 million to \$225.9 million when using a 7 percent discount rate, and from \$219.0 million to \$275.7 million when using a 3 percent discount rate. Under Option 2, we estimate that the costs of the rule will range from \$138.1 million to \$186.2 million when using a 7 percent discount rate, and from \$169.3 million to \$226.0 million when using a 3 percent discount rate. As seen in Table ES- 1, the range of cost estimates for both options depends on the assumptions used regarding the extent to which theaters are or will soon be providing closed movie captioning and audio description as proposed in this rule, but independent of this rulemaking. This Initial RA estimates costs using three different baselines due to a lack of information regarding the extent to which theaters are already providing captioning and audio description as

proposed in this rule (see Section 4.2 for details). Under each baseline, the Department assumes that no theaters (digital or analog) are audio description enabled (see Table 8 in section 4.2 (Baseline) for greater detail). Under Option 1, each baseline assumes that 2 percent of analog theaters currently meet the requirements of this proposed rule. Under Option 2, the baselines do not make assumptions about analog screens because the rule would defer requirements on such screens to a future rulemaking.

- Baseline 1 (One Screen Per-Theater) – This baseline assumes that on average, every movie theater with digital screens has one screen that is captioning enabled (based on an assumption of at least some compliance with the existing ADA requirements that public accommodations provide effective communication to persons with hearing and vision disabilities). This assumption leads to an estimate of about 13 percent of all digital screens having captioning capabilities. For Option 1, this baseline also assumes that 2 percent of analog screens are captioning enabled.
- Baseline 2 (Litigation-Based) – This baseline is derived from available data regarding movie theater companies that are now providing captioning and that have been involved in recent litigation challenging their failure to comply with existing ADA effective communication requirements. This baseline assumes that 42 percent of digital screens are captioning enabled. For Option 1, this baseline also assumes that 2 percent of analog screens are captioning enabled.
- Baseline 3 (2013 NATO Survey-Based) – This baseline uses data provided in testimony by officials from the National Association of Theater Owners (NATO) before Congress in May 2013, which stated that 53 percent of digital screens were already captioning enabled. For Option 1, this baseline also assumes that 2 percent of analog screens are captioning enabled.

Costs are estimated over a 15-year period, beginning with the year in which the rule becomes effective (assumed to be 2015) (Table ES-1 and Table ES-2). For both options, costs are estimated for theaters with digital screens beginning in the first year after publication of the final rule (2015). For Option 1, costs are estimated for theaters with analog screens beginning in the fourth year after publication of the final rule (2018).

The estimated costs primarily consist of the following: (1) the purchase of hardware and/or software to send captions to individual captioning devices; (2) the purchase of individual captioning devices as per the scoping requirements specified in the rule; (3) periodic costs to replace hardware, software, and devices; (4) annual operations and maintenance costs to cover storage, management, staff training, and other recurring costs; (5) any additional hardware costs to transmit audio description to individual audio description listening devices; and (6) any additional costs associated with the purchase of individual audio description listening devices. The costs do not include the costs to theaters to convert their screens from analog to digital, because this rule does not require any movie theater to convert to digital, and doing so it is not necessary to comply with the proposed requirements.

Table ES- 1: Estimated Costs Under Option 1 (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL Costs - 15 Years Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	TOTAL Costs - 15 Years Under Baseline 2 Assumptions – Litigation-Based (millions \$)	TOTAL Costs - 15 Years Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$225.9	\$191.9	\$177.8
3%	\$275.7	\$235.6	\$219.0

Table ES- 2: Estimated Costs under Option 2 (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL Costs - 15 Years Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	TOTAL Costs - 15 Years Under Baseline 2 Assumptions – Litigation-Based (millions \$)	TOTAL Costs - 15 Years Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$186.2	\$152.2	\$138.1
3%	\$226.0	\$186.0	\$169.3

Under Option 1, the estimated annualized costs of the proposed regulation under each of the three baseline scenarios range from **\$19.5 million to \$24.8 million** when using a 7 percent discount rate, and from **\$18.3 million to \$23.1 million** under a 3 percent discount rate. Under Option 2, the estimated annualized costs of the proposed regulation under each of the three baseline scenarios range from **\$15.2 million to \$20.4 million** under a 7 percent discount rate, and from **\$14.2 million to \$18.9 million** under a 3 percent discount rate (see Table ES- 3.¹).

The benefits of this rule are difficult to quantify for multiple reasons, including the following: (1) the Department has not been able to locate robust data on the rate at which persons with disabilities currently go to movies shown in movie theaters, (2) the fact that the number of persons with disabilities who will newly go to movies will change, (3) the number of persons with disabilities who will go to movies more often will change, (4) the number of persons who will go to the movies as part of a larger group that includes a person with a disability will change, and (5) the number of persons with disabilities who would have gone to the movies anyway, but under the rule will have a fuller and more pleasant experience will also change—all

¹ Annualized costs were calculated in a Microsoft Excel model using the PMT function (*-PMT(discount rate, years of analysis, present value of total costs)*).

of which will change by an unknown amount. In addition, the Department is not aware of any peer reviewed academic or professional studies that monetize or quantify the societal benefit of providing closed captioning and audio description at movie theaters.

In 2012, the per capita annual movie attendance rate in the U.S. and Canada was 4.1, with moviegoers paying on average \$7.96 per ticket.² Data on movie-going patterns of persons who are deaf or hard of hearing or are blind or have low vision is very limited, making estimations of demand very difficult. However, numerous public comments suggest that many persons who are deaf or hard of hearing or are blind or have low vision do not go to the movies at all, or attend movies well below the average per capita rate of 4.1 admissions annually, because of the lack of auxiliary aids and services that would allow them to understand the movie.

Though the Department cannot confidently estimate the likely number of people who would directly benefit from this proposed rule, we have reviewed data on the number of people with hearing or vision disabilities in the United States. The Census Bureau estimates that 3.3 percent of the U.S. population has difficulty seeing, which translates into a little more than eight million individuals in 2010, and a little more than two million of those had “severe” difficulty seeing.³ At the same time, the Census Bureau estimates that 3.1 percent of people had difficulty hearing, which was a little more than 7.5 million individuals in 2010, and approximately one million of them having “severe” difficulty hearing. However, for a variety of reasons not all of these people would benefit from this proposed rule (see Section 5, Benefits, for more details). In addition, there are others who can be considered *indirect* beneficiaries of the rule, such as those who would benefit from accompanying a person who is deaf or hard of hearing or is blind or has low vision to a movie showing, (e.g., a child who can enjoy and discuss a movie with his or her parent with a hearing disability) (see Section 5, Benefits, for more details).

Of perhaps greater significance to the discussion of the benefits of this rule, however, are issues relating to fairness, equity, and equal access, all of which are extremely difficult to monetize, and the Department has not been able to robustly quantify and place a dollar value on those benefits. Regardless, the Department believes the non-quantifiable benefits justify the costs of requiring captioning and audio description at movie theaters nationwide.

² See Motion Picture Association of America, Theatrical Market Statistics (2012), available at <http://www.mpa.org/wp-content/uploads/2014/03/2012-Theatrical-Market-Statistics-Report.pdf> (last visited July 10, 2014).

³ The Census defines difficulty seeing as “experiencing blindness or having difficulty seeing words or letters in ordinary newsprint even when normally wearing glasses or contact lenses.” It defines difficulty hearing as “experiencing deafness or having difficulty hearing a normal conversation, even when wearing a hearing aid “ See U.S. Census Bureau, U.S. Department of Commerce, P70-131, *Americans with Disabilities: 2010 Household Economic Studies* at 8 (2012), available at <http://www.census.gov/prod/2012pubs/p70-131.pdf> (last visited July 10, 2014).

Table ES- 3: Annualized Costs and Benefits of Proposed Rule (2015 Dollars, 15-year Time Horizon)

	7% Discount Rate			3% Discount Rate		
	Baseline 1 Assumptions (One Screen Per-Theater)	Baseline 2 Assumptions (Litigation-Based)	Baseline 3 Assumptions (NATO Survey Based)	Baseline 1 Assumptions (One Screen Per-Theater)	Baseline 2 Assumptions (Litigation-Based)	Baseline 3 Assumptions (NATO Survey Based)
Costs (million \$)	Option 1 – Four Year Compliance for Analog Screens					
	\$24.8	\$21.1	\$19.5	\$23.1	\$19.7	\$18.3
	Option 2 – Deferred Rulemaking for Analog Screens					
	\$20.4	\$16.7	\$15.2	\$18.9	\$15.6	\$14.2
Benefits	The proposed rule would address the discriminatory effects of communication barriers at movie theaters encountered by individuals who are deaf or hard of hearing or are blind or have low vision. By ensuring that movie theaters screen those movies that are produced and distributed with the necessary auxiliary aids and services—captioning and audio description—and that theaters provide the individual devices needed to deliver these services to patrons with these particular disabilities, this rule would afford such individuals an equal opportunity to attend movies and follow both the audio and visual aspects of movies exhibited at movie theaters. Although the Department is unable to monetize or quantify the benefits of this proposed rule, it would have important benefits. For example, it would provide people with hearing and vision disabilities better access to the movie viewing experience enjoyed by others; it would allow such persons to attend and enjoy movies with their family members and acquaintances; it would allow people with hearing or vision disabilities to participate in conversations about movies with family members and acquaintances; and it would promote other hard to quantify benefits recognized in Executive Order 13563 such as equity, human dignity, and fairness.					

The Initial RA shows that estimated annual costs for this proposed rule will not exceed \$100 million in any year under any of three baseline scenarios, irrespective of which option the Department selects for analog screens. Annual costs for each year during the 15-year expected term of the proposed regulation are depicted in Figure ES-1 for Option 1 and Figure ES-2 for Option 2.

Figure ES- 1: Annual Costs of Rule Under Option 1, Discounted at 7 Percent

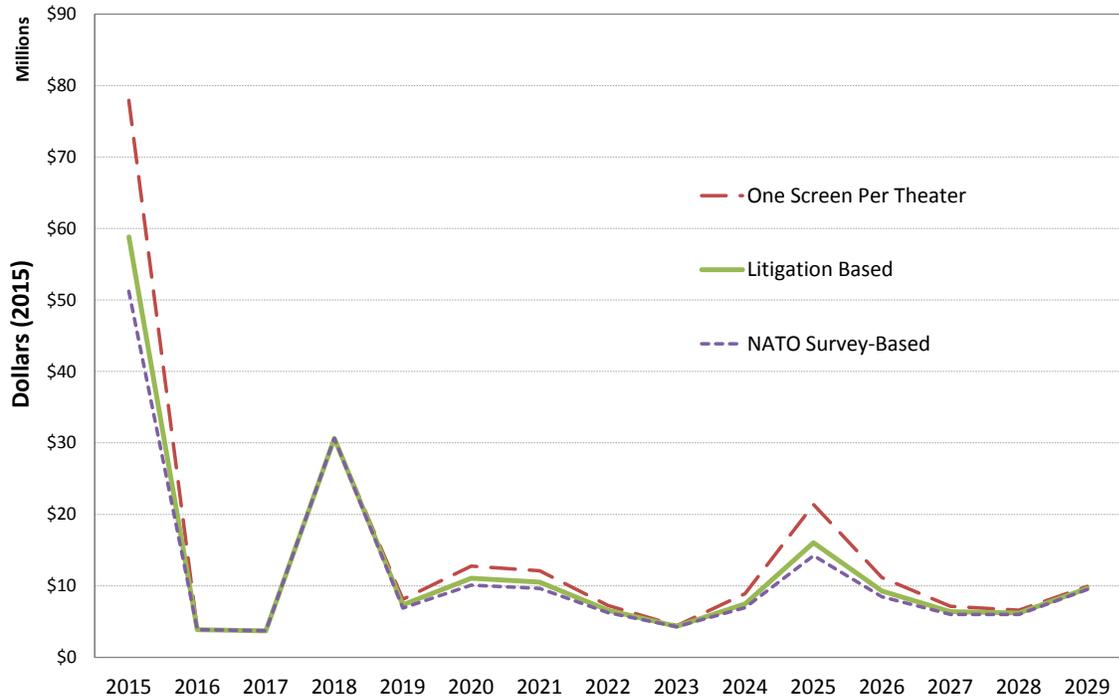
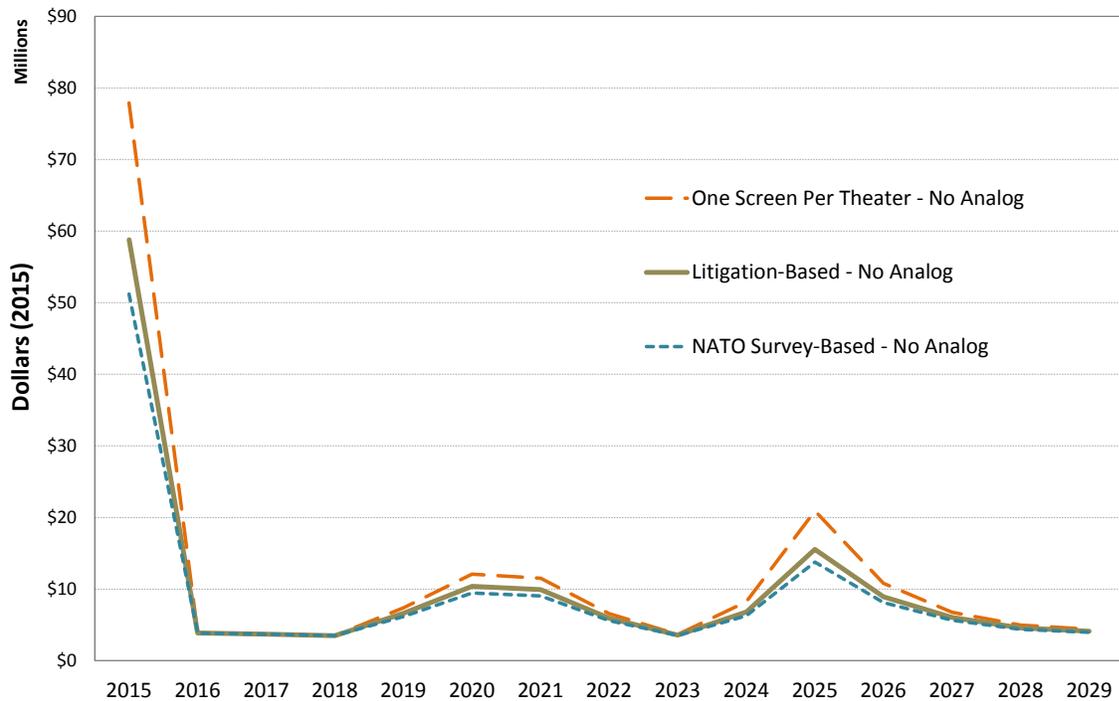


Figure ES- 2: Annual Costs of Rule Under Option 2, Discounted at 7 Percent



Because movie theater complexes vary greatly by number of screens, which significantly impacts overall costs per facility, the analysis breaks the movie exhibition industry into four

theater types based on size—Megaplexes (16+ screens), Multiplexes (8-15 screens), Miniplexes (2-7 screens), and Single Screen Theaters—and by digital or analog system. Per-facility costs were then calculated for each theater type. The largest costs per-year for any single movie theater would occur in the first year due to the purchase of necessary equipment. The average capital cost in the first year for digital Megaplex theaters is estimated to total \$38,547, while the average capital cost in the first year for digital single screen theaters is estimated to total \$3,198 (Table ES- 4).

Table ES- 4: Per Digital Theater Initial Capital Costs for Captioning and Audio Description Equipment (hardware, software, and devices), 2015 Dollars*

Digital Theater Type/Size	Per Theater Initial Capital Costs (Using Doremi Technology for Movies in Digital Format)	Per Theater Initial Capital Costs (Using USL Technology for Movies in Digital Format)	Average Initial Capital Costs for Digital Theater (Average of Different Technology)
Megaplex	\$40,540	\$36,554	\$38,547
Multiplex	\$27,880	\$25,798	\$26,839
Miniplex	\$10,920	\$10,252	\$10,586
Single Screen	\$3,285	\$3,111	\$3,198

Note: These initial capital costs include the costs to purchase and install: (1) captioning hardware and/or software (one per screen); (2) individual devices for captioning (ranging from 4 for Single Screens to 34 for Megaplexes); (3) additional hardware, if needed, to transmit audio description (from none to one device per screen); and (4) additional audio description listening devices (ranging from 2 for Single Screens to 18 for Megaplexes).

*Because unit costs for captioning and audio description equipment have either remained steady or declined between 2010 and 2013, they are assumed to remain constant from 2013 (when last researched) to 2015, when the final rule is expected to be published.

Should the Department proceed under Option 1 and cover analog screens in the final rule, though with a four-year compliance date, per theater costs for analog theaters would be higher than those for digital theaters for each type/size.⁴ The first year per-theater capital costs for analog single screen theaters, which are measured in year four, would total a little more than \$8,172 (Table ES- 5). The first year per-theater capital costs for digital single screen theaters, which are measured in year one, would average \$3,198 (Table ES-4).

⁴ The Department’s analysis assumes that the screens in movie theaters are either exclusively analog or exclusively digital.

Table ES- 5: Per Analog Theater Initial Capital Costs for Captioning and Audio Description Equipment (hardware, software, and devices), 2015 Dollars*

Analog Theater Type/Size	Per Theater Initial Capital Costs (Rear Window Technology for Analog Films)
Megaplex**	NA
Multiplex**	NA
Miniplex	\$31,884
Single Screen	\$8,172

Note: These first year costs include (1) the costs to purchase and install: captioning hardware and/or software (one per screen); (2) individual devices for captioning (ranging from 4 for Single Screens to 12 for Miniplexes); (3) additional hardware, if needed, to transmit audio description (from none to one device per screen); and (4) additional audio description listening devices (ranging from 2 for Single Screens to 4 for Miniplexes).

*Because unit costs for captioning and audio description equipment have either remained steady or declined between 2010 and 2013, they are assumed to remain constant from 2013 (when last researched) to 2015, when the final rule is expected to be published.

**Note that the RA assumes that all Megaplexes and Multiplexes have transitioned to digital projection systems by the time this rule goes into effect.

In keeping with the Regulatory Flexibility Act (“RFA”), the Initial RA examines the economic impact of the proposed rule on small businesses in the movie exhibition industry. Small businesses comprise the vast majority of firms in this industry. The current size standard for a small movie theater business is \$35.5 million dollars in annual revenue; in 2007, the latest year for which detailed breakouts by industry and annual revenue are available, approximately 98 percent of movie theater firms met the standard for small business and these firms managed approximately 53 percent of movie theater establishments.⁵ Therefore, this proposed rule will have a significant economic impact on a substantial number of small entities.

As part of this regulatory analysis, the Department has conducted an Initial Regulatory Flexibility Analysis (“IRFA”) on the economic impact of this rule on small business. The IRFA has been used by the Department to help determine whether small businesses would be disproportionately burdened. In addition, the Department has used the IRFA to examine other ways, if possible, to accomplish the Department’s goals with fewer burdens on small businesses. The Department considered multiple alternatives, including a more stringent one that would require analog theaters to be compliant within two years of the publication of the final rule; this alternative was rejected because of concerns about the burden on small movie theaters. Based on its assessment, and as previously discussed, the Department has decided to seek public comment on two options with respect to analog screens: a four-year compliance date for analog screens (Option 1), or deferral of new regulatory requirements for analog screens (Option 2).

⁵ The size standard of \$35.5 million can be found in *Table of Small Business Size Standards Matched to North American Industry Classification System Codes*. U. S. Small Business Administration. July 22, 2013.

As part of a larger movement within the film producing industry, nearly all film production is moving to digital. Industry estimates predict the production of movies using analog film will cease by 2014 and that by the end of 2015, analog film will no longer exist in theaters, with a few rare exceptions.⁶ Thus, by 2015, most movie exhibition places will have converted to the digital format. Because of the cost of transitioning to digital, most of the larger firms have already been able to convert or are planning to do so soon. Therefore, any remaining analog theaters are more likely to be small businesses. At the same time, per screen costs of captioning equipment are significantly higher for analog theaters than for digital theaters.

The IRFA estimates the average initial capital costs per-firm for firms that display digital or analog movies under Option 1, and for firms that display digital movies under Option 2. The average costs for small firms (which have a proportionately higher number of Single Screens and Miniplexes) are estimated to be between approximately 0.7 percent to 2.1 percent of their average annual receipts for firms with digital theaters, and between approximately 2.0 percent to 5.7 percent of average annual receipts for firms with analog theaters (Table ES- 6 and Table ES- 7).

⁶ See “Theater Official Optimistic Despite Attendance Slump,” available at <http://www.reviewjournal.com/business/theater-official-optimistic-despite-attendance-slump> (last visited July 10, 2014). Similarly, at the Spring 2013 CinemaCon industry convention, an industry analyst stated that by the end of 2015, analog film will no longer exist in cinemas, and it is likely that production of analog film in the United States will cease by the end of 2013. See “Local Theaters Face Tough Times as 35 mm Faces Extinction,” available at <http://www.sungazette.com/page/content.detail/id/594504/Local-Theaters-Face-Tough-Times-as-35-mm-faces-extinction.html?nav=5016> (last visited July 10, 2014).

Table ES- 6: Initial Capital Costs for Small Business Movie Theater Exhibitors, Digital Theaters by Revenue Group, 2015 Dollars

Cost	Firms \$499,999 and under	Firms \$500,000 to \$4,999,999	Firms \$5,000,000 to \$35,500,000**
Average receipts per firm*	\$188,384 to \$201,973	\$1,471,549 to \$1,484,995	\$9,705,377 to \$12,437,259
Average cost per theater*	\$3,198 to \$3,966	\$10,063 to \$10,586	\$13,984 to \$17,281
Average cost per firm*	\$3,233 to \$3,992	\$12,539 to \$14,454	\$81,176 to \$103,309
Ratio of average cost/receipts*	1.6% to 2.1%	0.8% to 1.0%	0.7% to 1.1%

Table ES- 7: Initial Capital Costs for Small Business Movie Theater Exhibitors, Analog Theaters by Revenue Group, 2015 Dollars

Cost	Firms \$499,999 and under	Firms \$500,000 to \$4,999,999	Firms \$5,000,000 to \$35,500,000**
Average receipts per firm*	\$188,384 to \$201,973	\$1,471,549 to \$1,484,995	\$9,705,377 to \$12,437,259
Average cost per theater*	\$8,172 to \$10,638	\$30,204 to \$31,884	\$43,449 to \$54,673
Average cost per firm*	\$8,263 to \$10,706	\$37,638 to \$43,534	\$252,224 to \$326,844
Ratio of average cost/receipts*	4.1% to 5.7%	2.5% to 3.0%	2.0% to 3.4%

* The ranges represent the figures calculated using the two datasets created from data from the 2007 Economic Census, which breaks out data by revenue category (downloaded from SBA's Web site and the Census Bureau's American FactFinder Web site, respectively), but which differ slightly. Note that the composition of theater size types also varies per revenue group depending on the dataset used, and therefore the average cost per theater varies as well.

** Note that the calculations for this category using the dataset downloaded from the SBA Web site do not include any data for the two firms in the revenue category for firms with sales/receipts/revenue of \$30,000,000-\$34,999,999 because no data on annual receipts for those two firms was included. The dataset downloaded from American FactFinder had different revenue categories from those downloaded from SBA's Web site. To estimate those firms meeting the SBA size standards using the dataset downloaded from the American FactFinder Web site, all the firms with revenues less than \$25 million, and half of those with revenues from \$25,000,000 to \$49,999,999 were counted as a way of estimating the number of entities that fall under \$35.5 million within that revenue category.

Note: These first year costs include (1) the costs to purchase and install: captioning hardware and/or software (one per screen); (2) individual devices for captioning (ranging from 4 for Single Screens to 34 for Megaplexes); (3) additional hardware, if needed, to transmit audio description (from none to one device per screen); and (4) additional audio description listening devices (ranging from 2 for Single Screens to 18 for Megaplexes). Because unit costs for captioning and audio description equipment have either remained steady or declined between 2010 and 2013, they are assumed to remain constant from 2013 (when last researched) to 2015, when the final rule is expected to be published.

1. Need for Regulation

Title III of the Americans with Disabilities Act (ADA) contains broad language prohibiting public accommodations and commercial facilities—including movie theaters—from discriminating against individuals with disabilities. The Department’s title III regulation implementing title III’s auxiliary aid provision reiterates the obligation of covered entities to ensure effective communication with individuals with disabilities and identifies, among other things, open captioning, closed captioning, and audio recordings as examples of auxiliary aids and services. 28 CFR 36.303(a)-(c). Recent technological changes in the movie theater industry—including wide-spread conversion from analog (film) projection to digital cinema systems—make exhibition of captioned and audio-described movies easier and less costly than ever before. In addition, at this time nearly all first run motion pictures released by the major domestic movie studios include closed captioning (and to a lesser extent, audio description). Going to the movies is a quintessential American experience. In any given month, over 56 million adults (roughly 26 percent of the adult population) make a trip to a movie theater to take in a movie.⁷ Movies are a part of our shared cultural experience, “water cooler” talk, and the subject of lunch-time conversations. The Supreme Court observed over 60 years ago that motion pictures “are a significant medium for the communication of ideas” and “may affect public attitudes and behavior in a variety of ways, ranging from direct espousal of a political or social doctrine to subtle shaping of thought which characterizes all artistic expression. The importance of motion pictures as an organ of public opinion is not lessened by the fact that they are designed to entertain as well as to inform.”⁸ When individuals who are deaf or hard of hearing or are blind or have low vision have the opportunity to attend movies that they can actually understand because of the availability of captions or audio description, they are exposed to new ideas and gain knowledge that contributes to the development of their communication and literacy.

Until recent technological developments, the only captioning methodologies available required that the captions be directly displayed on the film, and thus visible to all patrons in an auditorium, to which movie theaters and some patrons without disabilities objected. Current technology allows for closed captioning, which, in the context of movies, consists of captions that are visible only to those who use a special device and not the rest of the theater. This advancement in technology, coupled with the recent conversion to digital cinema, have made exhibition of captioned and audio-described movies easier and less costly.

⁷ See Experian Marketing Services, 2010 American Movie-Goer Consumer Report, available at <http://www.experian.com/blogs/marketing-forward/2010/02/20/2010-american-movie-goer-consumer-report> (last visited July 10, 2014).

⁸ *Joseph Burstyn, Inc. v. Wilson*, 343 U.S. 495, 501 (1952).

While there has been an increase in the number of movie theaters exhibiting movies with closed captions (and, to a much lesser extent, audio description) due in large part to successful disability rights litigation brought by private plaintiffs during the past few years, the availability of movies exhibited with closed captions and audio description varies significantly across the U.S. depending upon locality and movie theater ownership. The ADA requirements for effective communication apply to all public accommodations (including movie theaters) in every jurisdiction in the U.S and should be consistently applied using a uniform ADA standard. The right to access movies exhibited with closed captioning and audio description should not depend on whether the person with a disability resides in a jurisdiction where movie theaters, subject to a consent decree or settlement, exhibit movies with closed captioning and/or audio description. And, even in jurisdictions where theaters exhibit movies with captioning and audio description, many do not make captioning and audio description available at all movie showings. Thus, some persons who are deaf, hard of hearing, blind, or have low vision, still cannot fully take part in movie-going outings with family or friends, join in social conversations about recent movie releases, or otherwise participate in a meaningful way in an important aspect of American culture.

The Department received numerous comments from individuals who are deaf or hard of hearing or are blind or have low vision in response to its 2010 Advance Notice of Proposed Rulemaking on Movie Captioning and Video Description in Movie Theaters, (2010 ANPRM), 75 FR 43467, (July 26, 2010), describing how they were unable to take part in the movie-going experience with their friends and family because of the unavailability of captioning or audio description. Many individuals felt that this not only affected their ability to socialize and fully take part in family outings, but also deprived them of the opportunity to meaningfully engage in the discourse that often surrounds movie attendance.

The Department is convinced that regulation is warranted at this time in order to achieve the goals and promise of the ADA and is proposing to explicitly require movie theaters to exhibit movies with closed captioning and audio description at all times and for all showings whenever movies are produced, distributed, or otherwise made available with captioning and audio description unless to do so would result in an undue burden or fundamental alteration.

2. Background

2.1 Digital & Analog Film Formats

Currently, there are two formats used by movie theaters in the United States to exhibit movies: digital and analog technologies.⁹ The older format—*analog technology*—uses reels of film and a traditional film projector to show movies.¹⁰ Five to six reels of film are used for a typical feature-length analog movie. These reels of film must be physically delivered to each movie theater.

The newer digital cinema format, on the other hand, does not rely on film to exhibit movies. Instead, digital movies are captured as a series of electronic files in a standardized format (typically referred to as the “digital cinema package” or “DCP”) and are exhibited by movie theaters using a digital server and digital projector. Current digital cinema technology typically requires one digital server and one projector (or a combined server/projector) for each screen. Digital movies are delivered to movie theaters either physically by delivery of a storage medium (such as high-resolution DVDs, hard drives, or flash drives) or electronically via the Internet, fiber-optic cable, or satellite network.

Digital cinema has several advantages relative to analog film. For movie studios and distributors, digital cinema’s biggest calling card is its substantially lower distribution costs due to not having to “print” and distribute large reels of analog film to movie theaters nationwide. For movie theaters, the advantages of digital cinema include (1) images that do not degrade over time like analog film; (2) the ability to screen “alternate content” such as live concerts or sporting events; (3) greater flexibility in scheduling movies within auditoriums or at different times based on audience demand; and (4) enhanced revenue opportunities by, for example, exhibiting premium content such as digital 3D movies. Some movie aficionados debate quality and other differences, but digital cinema’s advantages to the movie production industry are significant.

Digital cinema systems are also, however, quite expensive for movie exhibitors. Costs range from about \$70,000 - \$100,000 per screen.¹¹ As a result, while some “early adopter”

⁹ As used in both the proposed rule and this Initial RA, the term “movie theater” refers to facilities used primarily for the purpose of showing movies to the public for a fee. By contrast, the term “auditorium” (or “screen”) refers to the individual room(s) within a movie theater used to exhibit a movie.

¹⁰ Analog films do have a digital component, as the sound portion of an analog film is generally provided digitally via optical/digital tracks recorded on the film or burned onto separate CD-ROMs.

¹¹ See Susman, Gary “How Digital Conversion Is Killing Independent Movie Theaters”, *Rolling Stone*, September 4, 2013, available at <http://www.rollingstone.com/movies/news/how-digital-conversion-is-killing-independent-movie-theaters-20130904#ixzz2fGz9PrQX> (last visited July 10, 2014); Burr, Ty, “Digital projection threatens some

movie theaters have had digital cinema systems since the mid-2000s, wide-spread conversion of domestic movie theaters to digital cinema did not commence until at least 2008. Several factors have helped spur broader growth of digital cinema systems since 2008, including: (1) industry-wide consensus on standardized file formats and secure delivery systems for DCPs; (2) agreements on financing vehicles for digital cinema systems, including subsidized leases by digital cinema vendors or manufacturers, formation of equipment buying consortiums, or payment of negotiated “virtual print fees” (“VPF”) by studios to movie theaters for each digital movie; and (3) the wide-spread popularity of digital 3D and IMAX films, which typically increase both attendance and revenue for movie theaters.¹²

Currently, the U.S. movie theater industry is in the midst of accelerated conversion to digital cinema. In May 2013, the head of National Association of Theater Owners (NATO) testified before Congress that “[a]pproximately 88% of the nation’s movie screens now use digital projection.”¹³ Meanwhile, fewer movies are now available on analog film to the point where in 2011, the head of the Motion Picture Association of America (MPAA) was reported to have predicted that analog film would disappear in less than three years.¹⁴

community theaters,” Boston Globe, January 27, 2013, available at www.bostonglobe.com/arts/movies/2013/01/27/digital-format-brings-closure-small-town-movie-theaters/MGVHwEiSBWp02Wc8wbhLL/story.html (last visited July 10, 2014).

¹² The value of such financing vehicles for digital conversion can be quite significant. Indeed, for some movie theater chains, third-party financing is covering (or has covered) nearly the entire cost of leasing and installing digital servers and projectors throughout their respective movie theaters. For example, in a 2010 SEC filing by the Regal Entertainment Group, Regal stated that “the costs of implementing digital projection in our theatres will be substantially funded” by outside financing sources such as collection of VPFs from movie studios. See Regal Entertainment Group 10-K Annual Report 12 (filed March 1, 2010) (available at http://www.faq.org/sec-filings/100301/REGAL-ENTERTAINMENT-GROUP_10-K/) (last visited July 10, 2014). In this annual report, Regal also goes on to note: “We will bear operating and maintenance costs with respect to digital projection systems, which we expect to be relatively comparable to what we currently spend on our conventional [analog] film projectors.” *Id.*

¹³ See Testimony of John Fithian, President and CEO of the National Association of Theater Owners, Before the U.S. Senate Committee on Health, Education, Labor and Pension (May 14, 2013), available at <http://www.help.senate.gov/imo/media/doc/Fithian.pdf> (last visited, July 10, 2014).

¹⁴ See “Theater Official Optimistic Despite Attendance Slump,” available at <http://www.reviewjournal.com/business/theater-official-optimistic-despite-attendance-slump> (last visited, July 10, 2014). Similarly, at the Spring 2013 CinemaCon industry convention, an industry analyst stated by the end of 2015, analog film will no longer exist in cinemas, and it is likely that production of analog film in the United States will end by the end of 2013. See “Local Theaters Face Tough Times as 35 mm Faces Extinction,” available at <http://www.sungazette.com/page/content.detail/id/594504/Local-Theaters-Face-Tough-Times-as-35-mm-faces-extinction.html?nav=5016> (last visited July 10, 2014).

2.2 Captioning & Audio Description Technology

Since the advent of captioning and audio description, movie studios (or movie distributors)—rather than movie theaters—have determined which movies will be captioned or audio-described and have underwritten the production of movies with these accessibility features. The movie studios (or movie distributors) then, in turn, distribute these captioned and/or audio-described movies to movie theaters without charge for these features. According to comments from the MPAA on the Department’s 2010 ANPRM, nearly all “wide-release” movies currently released by its member studios include captioning and about two-thirds of such movies include audio description.¹⁵

Turning to the exhibition side of the movie industry, technologies for movie theaters to show movies with captioning and audio description vary depending on whether the movie is being screened in an analog or digital format. For analog movies, the choices for captioning and audio description equipment are limited. Until the mid-1990s, the only way to caption a movie was to actually “burn” captions on the film. When the analog film was screened, such “open captions” were then visible to the entire movie audience much like sub-titles on foreign films. In 1995, however, WGBH in Boston began marketing a new system for exhibiting “closed captioned” movies that was called the Rear Window® closed captioning system (“RWC”). Unlike older “open caption” technology, the proprietary RWC system neither altered the actual film nor rendered captions visible to the entire movie audience. Instead, this system used several components—including a multi-channel digital media player, CD-ROMs, and LED panels mounted on the back wall of an auditorium—to generate “closed captions” (*i.e.*, captions that are only visible to patrons using specialized captioning display devices at their seats). A related proprietary system—called DVS-Theatrical® (“DVS”)—enables provision of audio description for analog movies. Together, RWC and DVS are referred to as the MoPix® system. Due largely to the movie theater industry’s commitment to digital conversion, MoPix® remains the only

¹⁵ Commenters on the Department’s 2010 ANPRM had advised the Department that at that time, only about 1% of movies exhibited in movie theaters were being shown with captions or audio description. Since that time, there has been a significant increase in the number of movie theaters that have the capacity to show movies with closed captioning and/or audio description and an increase in the times those movies are shown each week, in large part due to litigation against movie theater companies for failure to provide captioning and audio description. In May 2013, an industry representative estimated that at least 53 percent of digital movie screens had the capacity to show movies with closed movie captions or audio description. *See* Testimony of John Fithian, President and CEO of the National Association of Theater Owners, before the U.S. Senate Committee on Health, Education, Labor and Pension (May 14, 2013), available at , <http://www.help.senate.gov/imo/media/doc/Fithian.pdf> (last visited, July 10, 2014).

commercially-available system for exhibition of analog movies with closed captions and audio description.¹⁶

For digital cinema systems, there are more choices for captioning technologies. Exhibiting open captions for a digital film entails no additional equipment or costs for movie theaters. Digital cinema systems allow any movie to be shown with open captioning—at the movie theater’s discretion—simply by selecting the captioning file (generally referred to as the “HI” file) from the DCP on the appropriate digital server (assuming, of course, that the DCP provided by the movie studio or distributor included an open caption file). For closed captioning, all digital systems require one or more pieces of “hardware” (*e.g.*, server-based thumb drive or wall-mounted FM/IR panel) that essentially act as an electronic “conduit” for the captioning signal between the digital server and the individual captioning display “devices” used by patrons at their seats. With a cost of a little over \$3,000 to outfit an average-sized movie auditorium with digital captioning equipment (see discussion in Section 4.6), the capital costs for such captioning equipment are nominal relative to the costs for digital cinema systems.

Currently, there are four different closed caption technologies for digital cinema systems available on the commercial market—the Rear Window® system; the CaptiView™ system by Doremi Cinema, LLC; Ultra Stereo Labs (USL), Inc.’s closed caption infrared system; and Sony’s Entertainment Access Glasses and Audio Description receivers.¹⁷ The Department understands that about 300 RWC systems are currently installed at U.S. movie theaters

¹⁶ Over the past few years, there has not been an increase use of the MoPix® system, as most theaters that are acquiring captioning and audio description technologies are digital theaters, and they are choosing the newer technologies. In addition, WGBH no longer charges a licensing fee for its MoPix® system.

¹⁷ Each of these vendors’ closed captioning products relies on slightly different types of equipment. (Pursuant to the performance-based standards in the proposed rule, any type of closed-captioning technology is compliant so long as the individual end-user can effectively see and read the captions.) The Rear Window® captioning system works the same way for both digital and analog cinema systems—that is, closed captions result from: (1) the media player sending the captioning signal electronically to an LED display mounted high on a wall at the rear of the movie auditorium; and (2) a small, clear (acrylic) seat-mounted reflective device displaying the captions to an individual patron. See, “Motion Picture Access Frequently Asked Questions” available at, <http://ncam.wgbh.org/mopix/faq.html#rearwindow> (discussing RWC system) (last visited July 10, 2014) “Doremi’s CaptiView™ system, on the other hand, uses a server-based thumb drive emitter to send the captioning signal wirelessly to an OLED display device with a bendable (“gooseneck”) support arm that rests in a seat’s cup holder. See “CaptiView Brochure” available at <http://www.doremilabs.com/support/cinema-support/cinema-brochures/captiview-brochures/> (last visited July 10, 2014). For USL’s captioning system, the captioning signal is sent by either a wall-mounted IR panel or projection room-based Wi-Fi unit to a seat-mounted LED display device. In addition, USL has just started marketing its “eyewear/glasses” personal display devices. Sony’s glasses, the newest of the technologies on the market, are similar to USL’s glasses. The glasses work by projecting holographic captions in front of the movie patron’s eyes in a way that looks like the letters are floating in the air. Only the person wearing the glasses is able to see the text.

nationwide; research by the Department also suggests that as of March 2013, about 9,750 Doremi CaptiView™ systems have been installed domestically. Sony’s glasses are a recent entrant to the market, first available in 2012. Because Sony’s glasses are a very new and expensive product in a market when other less expensive and more established options are available (including cheaper glasses), they are not included in the main estimation; preliminary cost estimates using Sony glasses are presented in the Appendix for informational purposes.

For audio description, the technologies involved are neither complex nor expensive. For movie theaters using analog systems, audio description is delivered by DVS or MoPix® systems using the theaters’ existing sound system. For movie theaters with digital cinema systems, provision of audio-described movies generally requires no additional equipment; theaters may make use of their existing digital servers and sound systems. To exhibit an audio-described digital movie, a digital theater need only select the audio description file (generally referred to as the “VI-N” file) from the DCP on the appropriate digital server and play the movie. The audio description signal for that movie then will be transmitted to receivers/headsets worn by individual patrons via the theater’s existing FM or Infrared-based assistive listening system (“ALS”) using additional devices.

3. Proposed Captioning and Audio Description Requirements

In the DOJ Movie NPRM, the Department is proposing to provide specific regulatory requirements regarding how movie theaters should meet their effective communication obligations through the exhibition of closed-captioned and audio-described movies. The proposed rule states that a movie theater owner or operator is required to exhibit movies with closed captioning and/or audio description for all screenings so long as the movie has been produced by the movie studio or distributor with captioning or audio description. The proposed rule imposes no independent obligation on movie theaters to provide captions and audio description if the movie is not available with these features. The obligations that are imposed by the proposed rule are mitigated should a movie theater owner or operator establish that exhibition of closed-captioned or audio-described movies would result in an undue burden or fundamental alteration.

The proposed rule for captioning and audio description rests on the existing obligation of title III-covered facilities—such as movie theaters—to ensure that persons with disabilities receive “full and equal enjoyment” of their respective goods and services, including, as needed, the provision of auxiliary aids and services for persons with sensory disabilities.¹⁸

¹⁸ See Department’s Movie NPRM §§ III.B; see also 42 U.S.C. §§ 12182(a) (prohibiting public accommodations from disability-based discrimination in the “full and equal enjoyment” of goods and services), 12182(b)(2)(A)(iii) (requiring public accommodations to take affirmative steps as necessary “to ensure that no individual with a disability is excluded, denied services, segregated or otherwise treated differently * * * because of the absence of

The Department's proposed rule sets forth several discrete regulatory requirements. *First*, the Department is proposing to require movie theaters' digital screens to comply with the requirements to exhibit movies with closed captioning and audio-description for all screenings of movies available with these features within 6 months from the date of the publication of the final rule in the Federal Register.

Second, the Department is seeking public comment on two options for movie theaters' analog screens:

- Option 1: Require that as of four years from the final rule's publication date in the Federal Register, movie theaters' analog screens exhibit movies with closed captions and audio-description, for all screenings of movies available with these features.
- Option 2: Defer rulemaking on analog screens until a later date.

Third, the NPRM proposes to require movie theaters to have a certain number of individual captioning devices capable of delivering the captions at the seat of the individual, and to provide them to patrons upon request. The proposed numbers are based upon the number of seats in the movie theater itself and can be shared among the screens in the theater.

Fourth, the NPRM proposes to require movie theaters to have a certain number of devices capable of delivering audio description and to provide them to patrons upon request. The NPRM recognizes that the assistive listening devices used for audio amplification that are currently required by the 2010 ADA standards often contain an extra channel, and therefore can also be used to deliver audio description. The NPRM proposes minimal scoping for audio description listening devices, and also permits movie theaters that have two channel devices for assistive listening to use those devices for audio description in lieu of purchasing additional devices.

Fifth, the NPRM proposes to require that movie theaters ensure that their staff has the capability to operate the equipment to show captions and audio description and to show patrons how to use individual devices.

Finally, the NPRM proposes that movie theaters provide the public with notice about the availability of captions and audio description when it provides notice to the public regarding screenings and showing times of these movies.

As with other effective communication obligations under the ADA, covered entities do not have to comply with these requirements to the extent that they constitute an undue burden or fundamental alteration.

4. Cost Estimation

4.1 Methodology Overview

This section outlines the overall cost estimation approach under both proposed options, while details (including sources) are presented in the sections that follow.

In the industry's early days, movies were shown primarily in establishments that had a single auditorium with a single screen; in recent years a single establishment can have more than a dozen screens, all showing movies at the same time. Because movie theater complexes vary greatly by the number of screens, and the overall cost of this rule varies in direct relation to the number of screens, this RA breaks the movie exhibition industry into four theater types based on size—Megaplexes (16+ screens), Multiplexes (8-15 screens), Miniplexes (2-7 screens), and Single Screen Theaters. Per-facility costs were then calculated for each theater type, based on research-based assumptions regarding the average number of screens and auditorium size by type (Megaplexes, Multiplexes, Miniplexes, or Single Screen).

Because costs vary significantly between digital and analog captioning equipment, the RA uses estimates of the current total number of theaters in the U.S., recent estimates of the percent of screens that are digital, and the average number of screens per theater by type to determine the portion of theaters by each of the four types that are digital or analog. The vast majority of theaters now project digitally, and analog theaters are likely to be either single screen or Miniplex theaters (see the discussion in Section 4.2 for detail).

The theater type characteristics are used to estimate the captioning and audio description equipment that would be needed, which includes hardware and software, plus the appropriate number of personal devices based on the scoping requirements. These element counts are the building blocks of the cost estimates for an average theater of each of the four types.

The RA uses a 15-year timeframe for the cost analysis, which is a timeframe similar to that used in the Regulatory Impact Analysis of the Final Revised Regulations Implementing Titles II and III of the ADA (Sept. 15, 2010). This timeframe is the Department's current best estimate of the impact of this current rule before it is replaced by a revised regulation. Because the 15 year timeframe for this rule exceeds the expected life of captioning equipment, the analysis incorporates a rolling "replacement schedule" whereby this equipment is assumed to require replacement over a span of several years based on its expected useful life (see Section 4.7).

The analysis also accounts for growth (or contraction) over time in the movie theater exhibition industry by theater size type (Megaplexes, Multiplexes, Miniplexes, or Single Screen).

The four different types have very different average costs, due to their differences in size, as well as differences in growth/contraction rates.

An annual cost factor is also added, as a percentage of capital costs per theater, to account for operations and maintenance (O&M) and recurring training costs for the provision of the captioning and audio description services. The rule also requires that when movie theaters publish movie listings in newspapers or other publication formats to inform patrons of show times or locations, that such communications also indicate which screenings will be captioned or audio-described. However, the additional cost of noting which screenings will be captioned or have audio description is expected to be de minimus when a theater is already preparing a communication listing movie titles and screening times.

Total annual costs for each theater type represent the sum of the following costs, as applicable: (1) unit costs for captioning equipment (hardware/software and required individual devices) for existing and new digital screens; (2) unit costs for audio description equipment (hardware, if any, and required individual devices) for existing and new digital screens; (3) unit costs for captioning equipment (hardware/software and required individual devices) for existing analog screens; (4) unit costs for audio description equipment (hardware, if any, and required individual devices) for existing analog screens; and (5) the cost of replacing equipment under the “replacement schedule”; and (6) O&M costs.

These total costs are then measured against a baseline, which represents the Department’s best assessment of the state of the industry, including the availability of closed captioning and audio description, if the rule were not to be implemented. In this way, the resulting net costs appropriately reflect the incremental economic impact of the proposed rule. There is a certain degree of uncertainty regarding the extent to which movie theaters would be offering captioning and audio description if the Department were not undertaking this rulemaking process. Therefore, costs have been estimated against three different baseline scenarios, as detailed in Section 4.2.

Using this approach, annual costs are calculated for each of the 15 “regulatory years” and, within each of these years, separately for each of the three baseline scenarios. Annual cost totals for each year are presented as “rolled-up” costs for all theater types at both 3 percent and 7 percent discount rates, discounted to 2015. Additionally, the Initial RA also assesses annualized costs for all theater types collectively.

4.2 Baseline

As noted above, despite the existing obligation to provide effective communication to movie patrons who are deaf or hard of hearing or blind or have low vision, and the increasing availability of movies produced with captions and audio description, until recently, few movie theaters actually provided these auxiliary aids and services. The Department recognizes that this has begun to change. The industry as a whole is seeing an increasing number of theaters with closed captioning and audio description capabilities. The industry trade association, NATO,

surveyed its membership in early 2013 and, based on the responses of two-thirds of those surveyed, estimated that at least 53 percent of digital screens in the nation have closed captioning capabilities.¹⁹

At least one large theater chain executive has made statements to the Department indicating that its efforts to equip all of its digital theaters with captioning and audio description equipment were voluntary.²⁰ Meanwhile, several recent court cases have resulted in decisions and/or settlements that are resulting in theater owners providing closed captioning and audio description, independent of any Department actions (see NPRM for further details).

The assumption used for the current rate at which theaters have or soon will be providing closed movie captioning and audio description as proposed in this rule, but *independent of this particular rulemaking*, has a significant impact on the analysis. Given the uncertainty surrounding this assumption and the significant impact it has on the estimation of costs, the RA has estimated costs against three different estimations of the baseline. Under each baseline, the Department assumes that no theaters (digital or analog) are audio description enabled. Under Option 1, each baseline assumes that 2 percent of analog theaters currently meet the requirements of this proposed rule. Under Option 2, the baselines do not make assumptions about analog screens because the rule would defer requirements on such screens to future rulemaking.

- **Baseline 1 (One Screen Per-Theater)** – This baseline takes a minimum approach of assuming that every movie theater with digital screens has at least one screen—and only one screen—that is captioning enabled, based on an assumption of some level of compliance with the existing longstanding ADA requirements that public accommodations provide effective communication to persons with hearing and vision disabilities. This assumption leads to about 13 percent of all digital screens having captioning capabilities.

Specifically, this baseline assumes only one screen per theater complex will have captioning capabilities for digital Megaplexes, Multiplexes, Miniplexes, and Single Screen theaters. For Option 1, this baseline also assumes that 2 percent of analog screens are captioning enabled. Each screen with captioning capabilities is assumed to have the necessary software/hardware as well as the number of devices that would be needed to meet the proposed rule’s scoping standards for a single screen.

¹⁹ See Testimony of John Fithian, President and CEO of the National Association of Theater Owners, Before the U.S. Senate Committee on Health, Education, Labor and Pension (May 14, 2013), available at, <http://www.help.senate.gov/imo/media/doc/Fithian.pdf> (last visited July 10, 2014).

²⁰ Meeting in Washington, D.C. between Department staff and representatives of the National Association of Theater Owners (NATO) on September 26, 2011.

- **Baseline 2 (Litigation-based)** – This baseline is derived using available data regarding movie theater companies that are now providing captioning and that have been involved in recent litigation challenging their failure to comply with existing ADA effective communication requirements. After being involved in litigation, Regal, AMC, Cinemark, Harkins, and National Amusements have committed to providing or have already provided captioning and audio description at all their digital screens. Using 2010 NATO data detailing how many screens are owned by each of these exhibitors, this assumption leads to an estimate that 42 percent of digital screens are captioning enabled. For Option 1, this baseline also assumes that 2 percent of analog screens are captioning enabled.
- **Baseline 3 (2013 NATO Survey-based)** – This baseline uses data provided in testimony by officials from NATO before Congress in May 2013, which stated that 53 percent of digital screens were already captioning enabled. For Option 1, this baseline also assumes that 2 percent of analog screens are captioning enabled.

Table 8 below provides a visual representation of these baselines.

Table 8: Baseline Assumptions Regarding Movie Theaters Already Captioning or Audio Description Enabled

Baseline	Digital Theaters Captioning	Digital Theaters Audio Description	Analog Theaters Captioning	Analog Theaters Audio Description
Baseline 1	1 screen per digital theater fully captioning enabled	0% of digital theaters have necessary hardware or devices	2% of analog theaters already fully captioning enabled	0% of analog theaters have necessary hardware or devices
Baseline 2	42% of digital screens are captioning enabled. Of those theaters* with captioning enabled screens: <ul style="list-style-type: none"> • 50% have all necessary hardware and devices. • 50% have the necessary hardware but only half of the required devices. 	0% of digital theaters have necessary hardware or devices	2% of analog theaters already fully captioning enabled	0% of analog theaters have necessary hardware or devices
Baseline 3	53% digital screens are captioning enabled. Of those theaters* with captioning enabled screens: <ul style="list-style-type: none"> • 50% have all necessary hardware and devices. • 50% have the necessary hardware but only half of the required devices. 	0% of digital theaters have necessary hardware or devices	2% of analog theaters already fully captioning enabled	0% of analog theaters have necessary hardware or devices

*First, the percentage of screens that are captioning enabled was allocated by theater size (applied primarily to Megaplex and Multiplex screens). Then the number of theaters needing hardware and the number needing devices were calculated for each theater size (Megaplex, Multiplex, Miniplex, and Single Screen).

Detail on the distribution of these captioning enabled theaters by type is not known, so several general assumptions or approaches were used across all the baseline scenarios, as applicable. These include:

- In the Litigation-based and NATO Survey-based baseline scenarios, the assumptions regarding screens already captioning enabled refer to digital screens only. In addition, the RA assumes that only half of the theaters included in that percentage possess all the required number of devices; the other half possessed the required hardware but only half of the required devices.
- Litigation-based and NATO Survey-based baseline scenarios were applied primarily to Megaplex and Multiplex theaters, because those are the largest theater types and are assumed to all be digital. Table 9 below details how those distributions are applied to theaters by size type.

Table 9: Distribution of Assumed Captioning and Audio Description Equipped Theaters under Select Baseline Scenarios

Theater Type	Litigation Baseline (42.4% of all Digital Theaters)	2013 NATO Survey Baseline (53% of all Digital Theaters)
Megaplex	All (100%) Megaplexes (all digital)	All (100%) Megaplexes (all digital)
Multiplex	Nearly one fourth (23%) of Digital Multiplexes	Nearly one half (44%) of Digital Multiplexes
Miniplex	No Miniplexes	No Miniplexes
Single Screen	No Single Screens	No Single Screens

4.3 Movie Theater Establishments

Because the proposed rule for movie captioning and audio description imposes requirements that vary depending on the size of the movie theater (*e.g.*, number of screens and total seat count), the analysis breaks out the movie theater exhibition industry by theater size. The MPAA’s “*Theatrical Market Statistics – 2009*” presents statistics from 2007 to 2009 showing the break-down of movie theaters by four theater “types” in the United States: Megaplexes (16+ screens); Multiplexes (8-15 screens); Miniplexes (2 – 7 screens); and Single Screen Theaters.²¹

However, data on total or average seat counts for these four theater types was not found. Therefore, assumptions were made by Department subject matter experts (based on MPAA statistics and independent research) regarding screen and seat counts in the “average” theater for

²¹ The later editions of *Theatrical Market Statistics* break out the industry using only two categories, so the distributions in the 2009 edition were used and brought forward to 2015.

each of the four theater types. The following assumptions are used for the “average” theater for each type:

Table 10: Theater Characteristics by Size Type

Theater Type	Average Number of Screens	Average Seat Count per Screen	Average Number of Seats per Theater
Megaplex – 16+ screens	18	175	3,150
Multiplex – 8-15 screens	11	180	1,980
Miniplex – 2-7 screens	4	150	600
Single Screen – 1 screen	1	175	175

Source: Department of Justice Subject Matter Expert Review of MPAA data

To bring the estimates of the number of theaters forward from 2009 to 2015, average growth/contraction rates were applied to each type. Recent data on growth and decline of theaters by size is only available for two size categories: 1-7 screens per theater establishment and 8+ screens per theater establishment. Growth/contraction rates were calculated for the period 2008-2012 and applied as follows: an increase of 2.0 percent (calculated for theaters with 8+ screens) to Megaplexes and Multiplexes and a decline of 4.2 percent (calculated for theaters 1-7 screens) to Miniplexes, and single screens theaters.²² These growth/contraction rates were applied throughout the 15 years of the rule’s expected impact, to account for new theater construction as well as annual theater closures for Miniplexes and Single Screen Theaters. The RA thus estimates that as of the rule’s effective date, there will be 718 Megaplexes, 1,893 Multiplexes, 1,500 Miniplexes, and 966 Single Screen Theaters (Table 11).

²² Rates calculated based on data from MPAA’s *Theatrical Market Statistics – 2012*.

Table 11: Estimated Number of Theaters by Type at Rule’s Effective Date, and Annual Growth/Decline

Theater Type	Projected Number of Theaters in 2015	Annual Growth Rate	Projected Number of Screens in 2015
Megaplex – 16+ screens	718	2.0%	12,924
Multiplex – 8-15 screens	1,893	2.0%	20,823
Miniplex – 2-7 screens	1,500	-4.2%	6,000
Single Screen – 1 screen	996	-4.2%	996
TOTAL	5,107	---	40,743

Source: Estimated using data for 2008-2012 as in MPAA’s *Theatrical Market Statistics – 2012*.

Although data is available on the total number of screens in the U.S., it is not broken down by theater type. The total number of theaters of each type was multiplied by the average number of screens, to reach the total number of screens in the U.S.

4.4 Distribution of Digital and Analog Projection Systems

Because screens with digital projection have a different compliance date and significantly different costs than analog screens, the analysis under Option 1 must estimate the number and proportion (by theater type) of movie theaters that use digital projection systems on the projected effective date of the final rule (2015), and the number and percentage that remain analog. The cost model estimates costs for digital and analog theaters separately for multiple reasons, including the fact that larger theaters are more likely to have digital systems and are more likely to increase in number over time, while theaters that still have analog screens are more likely to be Single Screen or Miniplex establishments, which are contracting in number.

As discussed in testimony before Congress in May 2013, NATO estimates that 88 percent of screens in the nation now have digital projection.²³ Since larger establishments are more likely to have made the transfer to digital technology, the model distributes the proportion of digital screens starting with Megaplexes and Multiplexes first, and the remainder to Miniplexes and Single Screens. Since Megaplexes and Multiplexes accounted for approximately 82 percent of all screens, all of those types were assumed to have transitioned to digital; the remaining 6 percent of U.S. screens that are digital are distributed among the Miniplexes and Single Screen theaters. Based on the foregoing table, the cost model assumes the following with respect to the number of digital screens/theaters as of the effective date of the proposed rule:

²³ See Testimony of John Fithian, President and CEO of the National Association of Theater Owners, Before the U.S. Senate Committee on Health, Education, Labor and Pension (May 14, 2013), available at, <http://www.help.senate.gov/imo/media/doc/Fithian.pdf> (last visited July 10, 2014).

Table 12: Estimates of Digital and Analog Theaters and Screens in 2015

	Number of Digital Theaters	Number of Digital Screens	Number of Analog Theaters	Number of Analog Screens
Megaplex – 16+ screens	718	12,924	0	0
Multiplex – 8-15 screens	1,893	20,823	0	0
Miniplex – 2-7 screens	452	1,807	1,048	4,192
Single Screen – 1 screen	300	300	696	696
<i>TOTAL</i>	<i>3,363</i>	<i>35,854</i>	<i>1,744</i>	<i>4,888</i>

4.5 Scoping

Once the number of theaters has been established, as well as the portion that are analog and the portion that are digital, the next step is to establish the amount of equipment, by type, that will be needed by the average theater for each size group/type.

For captioning equipment available on the U.S. commercial market—irrespective of whether a theater is using an analog or digital cinema system—two separate types of equipment are required: (1) one or more pieces of “hardware” (such as a wall-mounted LED panel, wall-mounted IR emitter, a server-based thumb drive, and/or a media player that serves as an interface between an analog projector and the Rear Window® captioning system) that transmit the captioning signal/text to its associated end-use device; and (2) individual captioning devices (such as cup-holder mounted clear reflector screens or LED display units) that display the closed captions to individual movie patrons while seated in their seats or on specially designed eyewear/glasses. Generally speaking, one piece of “hardware” (*e.g.*, thumb drive, LED display, or IR emitter panel) is needed for each screen/auditorium exhibiting a closed-captioned movie. By contrast, for individual captioning devices, the proposed rule sets scoping requirements based not on screen counts, but, instead, on the total number of seats in the entire movie theater. Thus, for most (if not all) movie theaters, fewer individual pieces of captioning hardware will be needed per-facility than individual captioning devices. Consequently, because captioning hardware and devices are unlikely to be needed in exactly the same numbers at any given theater, the Initial RA separately assesses costs for captioning hardware and individual captioning devices.

The Department has determined the following equipment needs, based on the proposed rule’s scoping and the assumed average theater characteristics for both captioning and audio description capabilities (Table 13).

Table 13: Theater Equipment Requirements Based on Scoping and Theater Size

Equipment	Megaplex Avg: 18 Screens	Multiplex Avg: 11 Screens	Miniplex Avg: 4 Screens	Single Screen
Captioning Hardware Needed	18	11	4	1
Captioning Devices Needed	34	28	12	4
Audio Hardware Needed	18	11	4	1
Audio Devices Needed	18	11	4	2

4.6 Unit Costs for Equipment

Once the required equipment pieces were estimated for each theater type, they could be multiplied by their individual unit costs. For captioning equipment used with digital cinema systems, unit costs are based on retail prices (and any associated installation costs) provided to the Department by manufacturers of captioning equipment via telephone interviews or available on Web sites or brochures.²⁴ These costs are generally lower for digital equipment than unit cost information provided in response to the 2010 ANPRM, but not appreciably different for analog equipment.

²⁴ The unit cost estimates used in the Initial RA for digital captioning equipment (as well as analog captioning equipment) may be considered relatively conservative for several reasons. First, the cost trend for captioning equipment has been toward lower costs over the course of the last decade as technologies and manufacturing methods advance. Thus, it is expected that, in future years, costs for captioning equipment will be lower than the range of unit costs used in the Initial RA. Second, analog-to-digital cinema conversions by movie theaters that currently have analog (RWC) captioning equipment—as noted by several commenters—will likely lead to a lively secondary market for such equipment. Third, it is anticipated that the proposed rule will foster innovation (and lower costs) in the market for captioning equipment due to the proposed rule’s requirements (and, therefore, increased demand for captioning and audio description equipment).

Multiple companies sell digital closed captioning equipment and theaters have the freedom to choose which technology best fits their needs. Because of this, the analysis makes estimates based on price quotes from multiple sellers and averages the costs of the dominant technologies. Digital closed captioning equipment is available from the Rear Window® system;²⁵ the CaptiView™ system by Doremi Cinema, LLC; and Ultra Stereo Labs (USL), Inc.’s closed caption infrared system. The unit costs for the single required hardware (and any accompanying software update) needed per screen to transmit the captions and the costs for a single individual receiving device (of which multiple are required per screen, see Table 13 for estimated number of devices per theater) are listed in Table 14 below:

Table 14: Digital Captioning Equipment Unit Costs

Technology	Digital Captioning Hardware Cost (one needed per screen)	Digital Captioning Individual Device Costs (multiple per screen/theater may be needed)	Digital Audio Description Hardware Cost (one needed per screen)	Digital Audio Description Individual Device Costs (multiple per screen/theater may be needed)
Doremi’s CaptiView	\$690	\$430	\$625	\$125
USL*	\$1,057	\$479	\$0	\$69

** USL technology can be used with two different devices (a cup-holder held viewer and glasses). This figure is an average of the two (cup-holder viewer and glasses, \$443 and \$514, respectively). In addition, USL captioning hardware can be used for audio description – therefore there are no additional hardware costs.*

Unit costs for analog captioning equipment are similarly based on retail prices (and any associated installation costs) provided to the Department by manufacturers of captioning equipment via telephone interviews or available on Web sites or brochures. Unlike digital captioning equipment, there is currently only one commercially-available product—the Rear Window® Captioning system (“RWC”) developed and marketed by WGBH—that enables analog systems to display closed captions to moviegoers on individual captioning devices (Table 15).

²⁵ Rear Window’s digital captioning system is built-up from the platform developed for its analog equipment and is substantially higher in cost than the systems provided by Doremi’s CaptiView and USL. Due to the substantially higher cost of Rear Window for digital cinemas, it is not included in the cost analysis, as there are several products of lower cost, and it is assumed theater owners will attempt to minimize their cost. Furthermore, WGBH has indicated that there has been no new demand for its Rear Window system, further bolstering the assumption that theaters with digital screens are not choosing this product.

Table 15: Analog Captioning Equipment Unit Costs

Technology	Analog Captioning Hardware Cost (one per screen needed)	Analog Captioning Device Costs (multiple per screen/theater may be needed)	Analog Audio Description Hardware Cost (one per screen needed)	Analog Audio Description Device Costs (multiple per screen/theater may be needed)
Rear Window ²⁶	\$7,113	\$95	\$467	\$106

Using these unit costs, the average, incremental cost of purchasing the necessary equipment to transmit digital captions is estimated to be approximately \$38,547 for a Megaplex theater, \$26,839 for a Multiplex, \$10,586 for a Miniplex and \$3,198 for a Single Screen theater (Table 16). These costs are estimated based on paying full retail prices and do not incorporate any possible discount pricing or subsidies. These costs also do not incorporate any of the costs of transitioning from analog to digital projection systems. The proposed rule does not require that a theater transition to digital projection.

²⁶ The hardware required for Rear Window technology includes an LED display necessary to show captions in each analog projection auditorium, a Datasat/DTS XD20 interface, and individual Reflectors that are used by patrons. The cost for the LED display ranges from \$2,850 to \$3,975, depending on whether it is a 2 or 3 line display (a 2 line display is recommended); the LED display cost used in Regulatory Analysis is an average of the cost of the two sizes of display. The Datasat/DTS XD20 interface, which is an interface connecting the Rear Window LED display to the theater system, costs about \$4,200 per auditorium. The only device for individual use is the Rear Window Reflector, which fits into cup holders and costs \$95 each. (Note: all these prices are taken from the “Rear Window® Captioning (RWC) Components Cost Overview” released by Median Access Group at WGBH August 2010, and adjusted for the fact that licensing fees are no longer required.) For audio description, the William Sound Audio System is compatible with analog captioning systems and was used to estimate video description equipment costs for analog systems. The William Sound Audio System requires an audio transmitter for each auditorium, which costs \$467. Patrons may use a receiver and a headset, which cost \$88 and \$18, respectively.

**Table 16: Theater Costs, By Size Type, to Purchase Digital Captioning Equipment, 2013
Dollars***

Cost Per Digital Theater**	Doremi's CaptiView	USL	Average
Megaplex – 16+ screens	\$40,540	\$36,554	\$38,547
Multiplex – 8-15 screens	\$27,880	\$25,798	\$26,839
Miniplex – 2-7 screens	\$10,920	\$10,252	\$10,586
Single Screen – 1 screen	\$3,285	\$3,111	\$3,198

Note: These costs include the costs to purchase and install: (1) captioning hardware and/or software (one per screen); (2) individual devices for captioning (ranging from 4 for Single Screens to 34 for Megaplexes); (3) additional hardware, if needed, to transmit audio description (from none to one device per screen); and (4) additional audio description listening devices (ranging from 2 for Single Screens to 18 for Megaplexes).

*Because unit costs for captioning and audio description equipment have either remained steady or declined between 2010 and 2013, they are assumed to remain constant from 2013 (when last researched) to 2015, when the final rule is expected to be published.

**These costs are based on the average theater characteristics presented in Table 2 regarding the average number of screens and seats.

The per-theater costs for Miniplexes and Single Screens using analog systems are notably higher. (Note: As discussed in Section 4.4 above, the RA assumes that all Megaplexes and Multiplexes have transitioned to digital projection systems). Using the unit costs for Rear Window's analog closed captioning technology, the average, incremental cost of purchasing the necessary equipment to transmit captions is estimated to be approximately \$31,884 for a Miniplex and \$8,172 for a Single Screen theater (Table 17). Again, the costs are estimated based on paying full retail prices and do not incorporate any possible discount pricing or subsidies.

**Table 17: Theater Costs, By Size Type, to Purchase Analog Captioning Equipment, 2013
Dollars***

Cost Per Analog Theater	Rear Window
Megaplex – 16+ screens **	NA
Multiplex – 8-15 screens **	NA
Miniplex – 2-7 screens	\$31,884
Single Screen – 1 screen	\$8,172

Note: These costs include the costs to purchase and install: (1) captioning hardware and/or software (one per screen); (2) individual devices for captioning (ranging from 4 for Single Screens to 12 for Miniplexes); (3) additional hardware, if needed, to transmit audio description (from none to one device per screen); and (4) additional devices for audio description (ranging from 2 for Single Screens to 4 for Miniplexes).

*Because unit costs for captioning and audio description equipment have either remained steady or declined between 2010 and 2013, they are assumed to remain constant from 2013 (when last researched) to 2015, when the final rule is expected to be published.

**Note that the RA assumes that all Megaplexes and Multiplexes have transitioned to digital projection systems.

4.7 Replacement of Equipment over Fifteen Year Period of Analysis

Given the assumed 15-year term of the proposed rule, movie captioning and audio description equipment will require replacement one or more times during this period. Public comments to the 2010 ANPRM, as well as information provided by manufacturers of captioning equipment, suggest that captioning hardware is expected to last about 10 years, while captioning and audio description listening devices are likely to last four to seven years before requiring replacement. The Initial RA thus incorporates a “replacement schedule” for captioning hardware and devices into the cost model, which assumes that all captioning hardware will be replaced 9-11 years after initial installment, and all captioning devices will need replacement after four to seven years of use.

Moreover, within these respective replacement schedules for captioning hardware and devices, it is likely that more equipment will need replacement near the mid-point of the replacement timeframe (as opposed to “earlier” or “later” years). The Initial RA's cost model thus employs the following weighted percentages in the respective rolling replacement schedules for captioning and audio description hardware (Table 18) and devices (Table 19):

Table 18: Captioning and Audio Description Hardware Replacement Schedule

Year After Purchase	Percent of All Hardware Needing Replacement
Hardware Replacement -- 9th Year	15%
Hardware Replacement --10th Year	70%
Hardware Replacement --11th Year	15%

Table 19: Captioning and Audio Description Individual Devices Replacement Schedule

Year After Purchase	Percent of All Hardware Needing Replacement
Device Replacement -- 4th year	15%
Device Replacement -- 5th year	35%
Device Replacement -- 6th year	35%
Device Replacement -- 7th year	15%

In practice, these replacement schedules for captioning hardware and devices mean that, in any given regulatory year after the fourth year, some proportion of captioning equipment is being replaced. Which captioning hardware and devices are being replaced in any particular year (and for which movie theaters) simply follows a consistent pattern depending on the year in which the equipment was originally installed/placed in service.²⁷

²⁷ For example, in regulatory “Year 10,” the replacement schedules for equipment contemplates a mix of replacement costs, with some costs incurred from “replacement of replacement” captioning devices (*i.e.*, devices

Note that Miniplex and Single Screen theaters have negative growth rates—i.e., declines—in contrast to the positive growth rates experienced by Megaplex and Multiplex theaters. Going forward, the ratio of theaters at the time of replacement was applied to account for theaters that may have closed since purchasing the hardware and devices and have no need for replacements.

4.8 Operations, Maintenance and Training Costs

Information provided by captioning equipment vendors and other industry sources suggests that operation and maintenance (“O&M”) costs for captioning equipment will be relatively modest. Captioning hardware, which is typically mounted high on a wall in a movie auditorium (or otherwise placed in the projection booth), is unlikely to be tampered with, or accidentally broken by, movie patrons or theater staff. Captioning devices, on the other hand, are more prone to potential wear and tear by virtue of their use by individual movie patrons. Thus, it is expected that captioning devices will require occasional cleaning or minor maintenance by theater staff. Captioning equipment companies also noted that repair of such equipment is rare. For the most part, if captioning equipment breaks down, the answer is replacement rather than repair. (Such replacement costs are covered by the replacement schedule for captioning equipment discussed above). Repair costs for captioning equipment are thus expected to be de minimus.

The rule will require that at least one person at the theater be able to provide patrons with closed captioning devices and audio description listening devices and direct patrons on the equipment’s use. This requirement can most easily be met by expanding the training for those persons who will already be required to be on-site to manage or oversee overall operations and/or the start of the exhibition of the movies. In addition, staff is already required by theaters to distribute assistive listening devices when requested by patrons, and direct patrons on the use of those devices. It is reasonable to assume that the same staff member would provide assistance with the closed captioning devices and audio description listening devices as well. A separate staff with ADA expertise is not required. The costs of this part of the rule will include any additional training time and any time spent providing and collecting devices and demonstrating their use, if needed.

which replaced devices initially put into service in “Year 1” but that have outlived their useful lives), replacement of original devices (which were in their 4th – 7th years of service), and replacement of original hardware.

Specifically, for “Year 10,” the cost model calculates replacement costs for digital captioning equipment (assuming the same unit cost as the original equipment) based on the following formula:

Replacement Costs “Year 10” = [Cost of Digital Devices Replaced in “Year 5” x .35] + [Cost of Digital Devices Replaced in “Year 6” x .15] + [Cost of Digital Devices Installed in “Year 3” x .15] + [Cost of Digital Devices Installed in “Year 4” x .35] + [Cost of Digital Devices Installed in “Year 5” x .35] + [Cost of Digital Devices Installed in “Year 6” x .15] + [Cost of Digital Hardware Installed in “Year 1” x .15].

The Initial RA uses a value equivalent to 3 percent of all the captioning and audio descriptive equipment owned by the theater to capture the afore-discussed minimal operations and maintenance cost and incremental increase to staff time, costs of adding information that captioning or audio description is available when preparing communications regarding movie offerings, and other potential increases in administrative costs. These costs are annual. This 3 percent is a factor commonly used in construction and equipment maintenance (see the Regulatory Impact Analysis of the Final Revised Regulations Implementing Titles II and III of the ADA (Sept. 15, 2010)).

In dollar terms, operations, maintenance, and training costs for analog theaters are estimated on an annual basis to average from a low of \$245 for Single Screens to a high of \$957 for Multiplexes; for digital theaters’ operations, maintenance and training costs are estimated to average from a low of \$96 for Single Screens to a high of \$1,156 for Megaplexes (Table 20).

Table 20: Per Theater Additional Operations and Maintenance Costs*

Digital Theater Type/Size	Average First Year Initial Capital for Digital Theater	Average O&M costs – 3% of Capital costs	Average First Year Initial Capital for Analog Theater	Average O&M costs – 3% of Capital costs
Megaplex	\$38,547	\$1,156	NA**	NA**
Multiplex	\$26,839	\$805	NA**	NA**
Miniplex	\$10,586	\$318	\$31,884	\$957
Single Screen	\$3,198	\$96	\$8,172	\$245

*Since unit costs for captioning and audio description equipment have either remained steady or declined between 2010 and 2013, they are assumed to remain constant from 2013 (when last researched) to 2015, when the final rule is expected to be published.

**Note that the RA assumes that all Megaplexes and Multiplexes have transitioned to digital projection systems.

The Department is presenting these estimates for operations, maintenance, and training and seeking public comment.

4.9 Reporting and Recordkeeping Requirements

The rule does not propose any additional reporting of recordkeeping by covered entities to be available or submitted to Federal agencies.

4.10 *Other Assumptions*

In addition to all the unit costs, theater characteristics, and other inputs specified with greater detail that are critical to the estimation, the analysis also requires certain other assumptions. The RA seeks to make conservative assumptions, which err on the side of leading to higher costs, in the absence of more robust information. These assumptions include:

- All newly constructed theaters will use digital exhibition processes, not analog.
- Those theaters that still project analog film in 2015 are assumed to remain analog. (This is considered a “conservative” assumption because costs for analog captioning are significantly higher than for digital captioning.)
- Analog theaters are assumed to make their equipment purchases at the end of the fourth year (2018), just before compliance is required.
- Since the number of Miniplex and Single Screen theaters is declining, the number of theaters that purchase equipment in the procurement year is based on the number of theaters that are expected to be in business the following year. In other words, if a theater expects to go out of business, we assume they will not make the investment in purchasing the captioning technology the year before they close.
- In the absence of more detailed information, the model assumes that two percent of all analog theaters are already providing captioning and audio description.²⁸ (In 2015, this amounts to around 35 Miniplex and Single Screen theaters and about 100 screens total; in 2018, those figures changed to 32 theaters and 89 screens.)
- Unit costs for captioning and audio description are assumed to remain constant from 2013 (when last researched) to 2015, when the final rule is expected to be published. Since unit costs for the equipment surveyed have either remained steady or declined between 2010 and 2013, this assumption may likely overestimate at least some equipment costs. Note also, that this assumption means that per-theater costs to purchase equipment are the same for 2013 and 2015, all other factors being equal.
- All theaters will comply with the rule, and no theater will assert that it does not need to comply with this ADA obligation because compliance would result in an “undue burden.” The ADA provides that covered entities need not comply with a requirement if doing so would result in a fundamental alteration or undue burden. 42 U.S.C. 12182(b)(2)(A)(iii). Since it is likely that at least some movie theaters will not purchase the specified captioning and audio description equipment because doing so

²⁸ Note that while Baseline 1 assumes that all single screen theaters with digital projection are already providing captioning and audio description, the cost model did not make the same assumption for analog theaters.

would constitute an undue burden, this assumption errs on the side of overestimating costs.

4.11 Total Costs

For Option 1, costs of compliance with this proposed rule over a 15 year period from the date of publication of the final rule are estimated to range from **\$177.8 million to \$225.9 million** when using a 7 percent discount rate, and from **\$219.0 million to \$275.7 million** when using a 3 percent discount rate. For Option 2, costs of compliance over a 15 year period from the date of publication of the final rule are estimated to **range from \$138.1 million to \$186.2 million** when using a 7 percent discount rate, and from **\$169.3 million and \$226.0 million** when using a 3 percent discount rate. Table 21 and Table 22 show that these cost ranges depend on which baseline is used regarding the extent which theaters have or will soon be providing closed movie captioning and audio description as proposed in this rule, but independent of this rulemaking.

Table 21: Estimated Costs Under Option 1 (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL Costs - 15 Years Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	TOTAL Costs - 15 Years Under Baseline 2 Assumptions – Litigation-Based (millions \$)	TOTAL Costs - 15 Years Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$225.9	\$191.9	\$177.8
3%	\$275.7	\$235.6	\$219.0

Table 22: Estimated Costs Under Option 2 (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL Costs - 15 Years Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	TOTAL Costs - 15 Years Under Baseline 2 Assumptions – Litigation-Based (millions \$)	TOTAL Costs - 15 Years Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$186.2	\$152.2	\$138.1
3%	\$226.0	\$186.0	\$169.3

Under Option 1, the estimated annualized costs of the proposed regulation under each of the three possible baseline scenarios range from **\$19.5 million to \$24.8 million** when using a 7 percent discount rate, and from **\$18.3 million and \$23.1 million** when using a 3 percent discount rate. Under Option 2, the estimated annualized costs of the proposed regulation under each of the three possible baseline scenarios range from **\$15.2 million to \$20.4 million** when using a 7

percent discount rate, and from **\$14.2 million and \$18.9 million** when using a 3 percent discount rate. See Table 23 and Table 24.²⁹

Table 23: Estimated Annualized Costs Under Option 1 (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL 15 Year Costs	TOTAL 15 Year Costs	TOTAL 15 Year Costs
	Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	Under Baseline 2 Assumptions – Litigation-Based (millions \$)	Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$24.8	\$21.1	\$19.5
3%	\$23.1	\$19.7	\$18.3

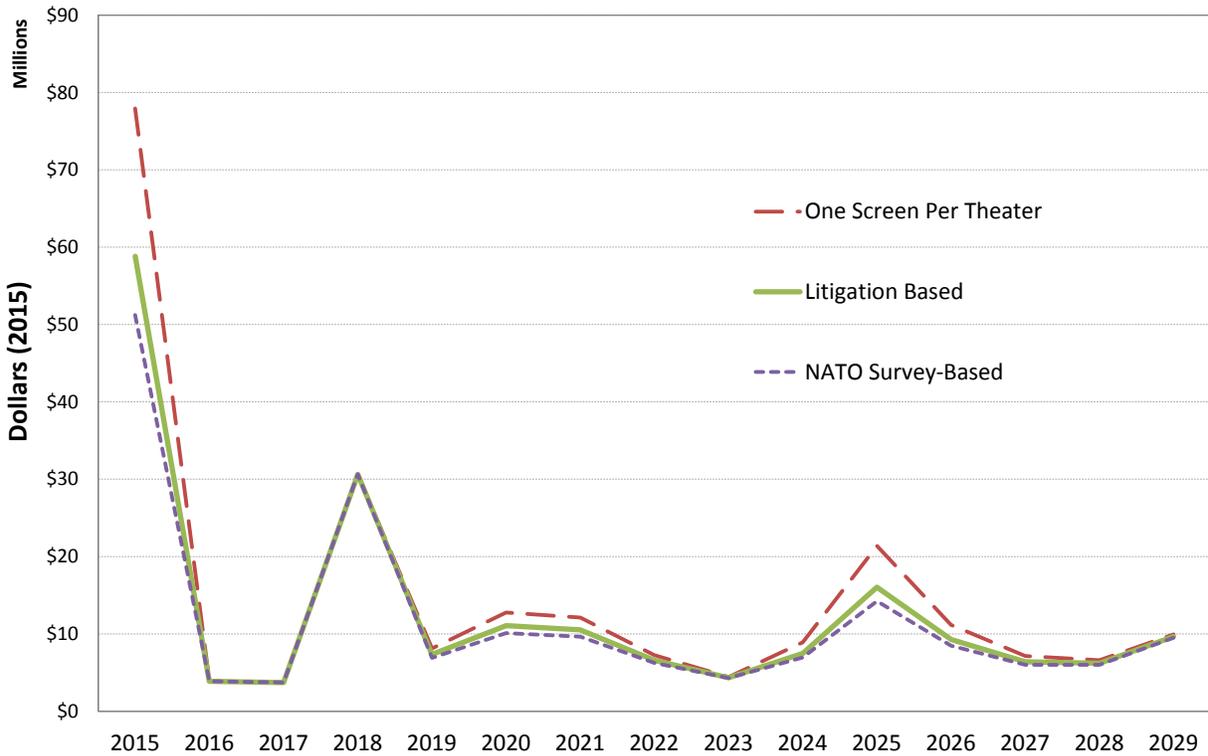
Table 24: Estimated Annualized Costs Under Option 2(2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL 15 Year Costs	TOTAL 15 Year Costs	TOTAL 15 Year Costs
	Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	Under Baseline 2 Assumptions – Litigation-Based (millions \$)	Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$20.4	\$16.7	\$15.2
3%	\$18.9	\$15.6	\$14.2

The Initial RA shows that estimated annual costs for this proposed rule will not exceed \$100 million in any year under any of three baseline scenarios, irrespective of whether the Department adopts either option for analog screens. Annual costs for each year during the 15 year expected term of the proposed regulation under Option 1 are depicted in Figure 3. In addition, detailed tables of annual costs for each of the baseline scenarios are presented in the Appendix.

²⁹ Annualized costs were calculated in a Microsoft Excel model using the PMT function ($-PMT(\text{discount rate}, \text{years of analysis}, \text{present value of total costs})$).

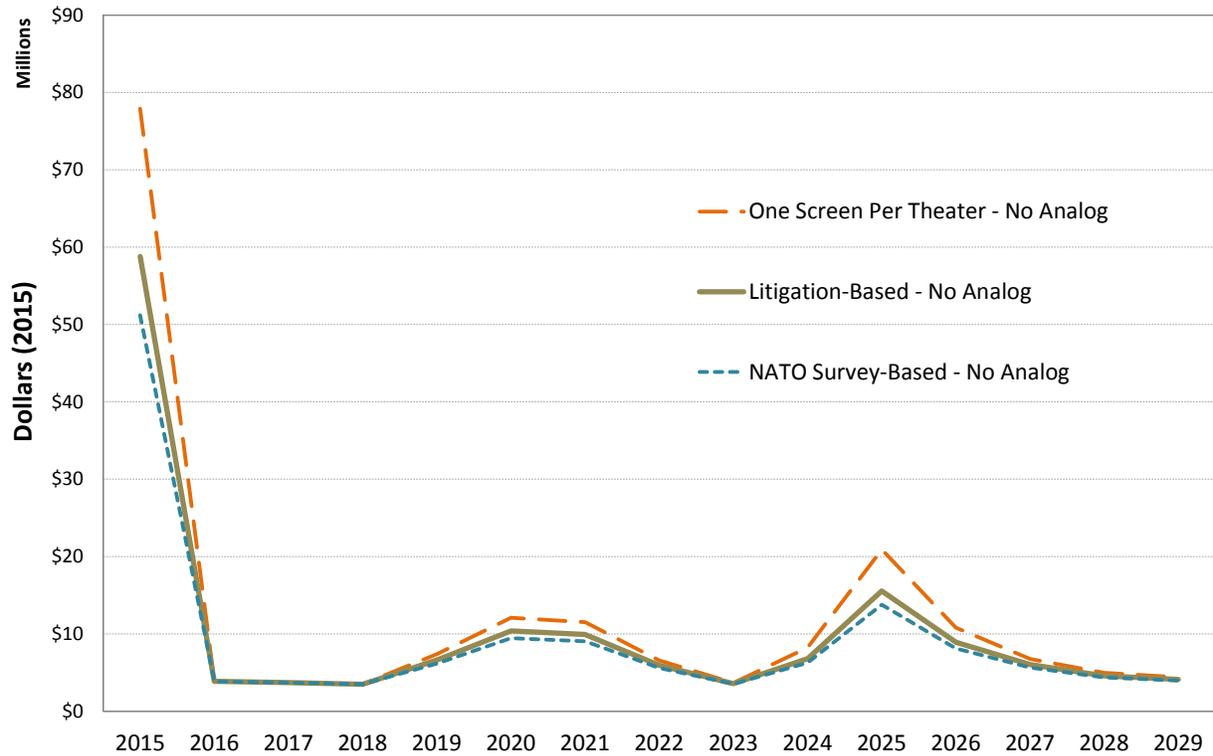
Figure 3: Annual Costs of Rule Under Option 1 (Discounted at 7 Percent)



As seen in Figure 3, the greatest single-year costs occur in the first year following the expected publication of the final rule, and these costs range from approximately \$50 million under the NATO Survey-Based Baseline to just under \$80 million under the One Screen Per-Theater Baseline.³⁰ The concentration of costs in the first year is due to the fact that the most recent published data indicate that 88 percent of screens use digital projection and they will be required to have the necessary equipment within six months of publication of the final rule in order to provide closed captioning and audio description for movies that come with those features from the distributor. Under the scenario in which analog screens are required to comply within four years (Option 1), the next largest single-year costs occur during the fourth year after the expected publication of the final rule, which is the compliance deadline for movie theaters with analog screens. If rulemaking is deferred for analog screens, the next notable increase in costs occurs between years 9 and 11, as many theaters may need to replace captioning hardware at those times.

³⁰ The decision on whether or not to adopt Option 1 or Option 2 does not impact which year would have the largest costs nor what those costs would be. The costs for the first year of this rule would remain the same under either option.

Figure 4: Annual Costs of Rule Under Option 2 (Discounted at 7 Percent)



A break-out of costs by category, as shown below in Figure 5 for Option 1 and Figure 6 for Option 2, illustrates the fact that costs for digital captioning equipment are the most significant costs for the proposed rule overall. This is due to the fact that 88 percent of screens are currently exhibiting movies in digital format. Figure 5 and Figure 6 also show that costs for audio description are a relatively small part of total 15-year costs for the entire rule.

Figure 5: Total Costs of Rule Under Option 1 (Discounted at 7 Percent, 15-year Time Horizon)

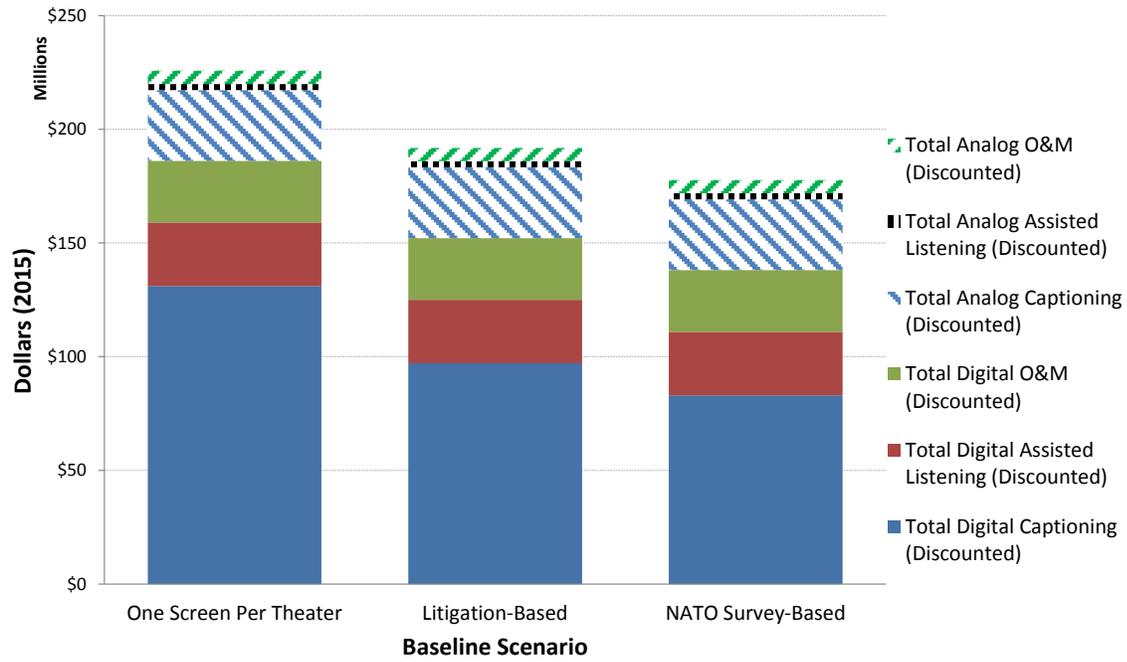
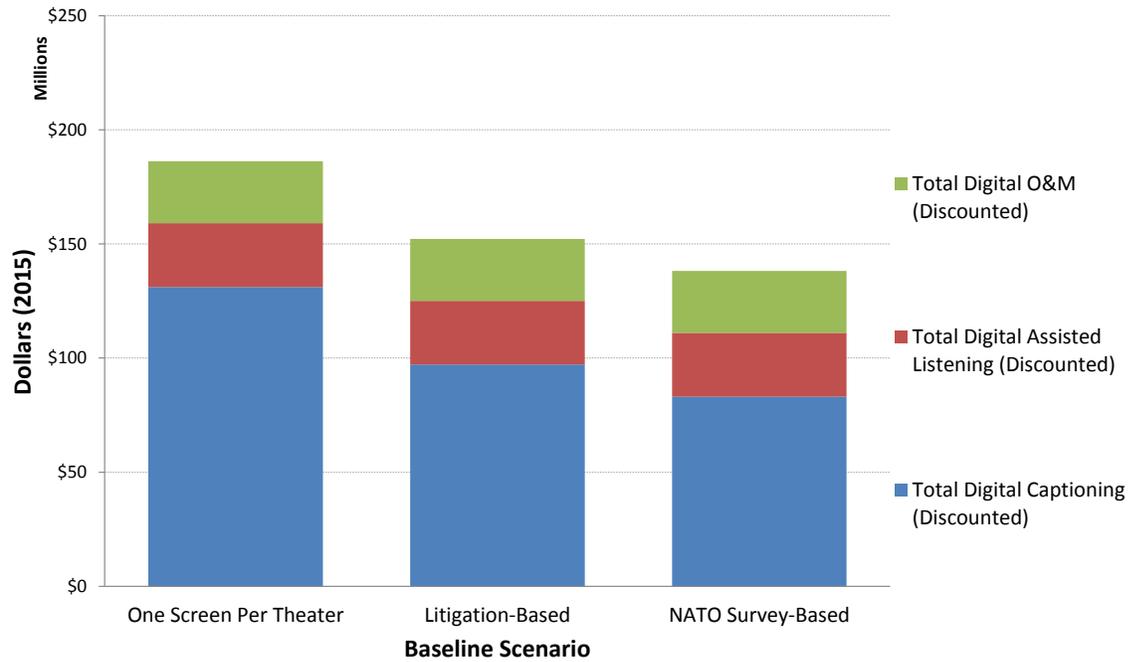


Figure 6: Total Costs of Rule Under Option 2 (Discounted at 7 Percent, 15-year Time Horizon)



The relative size of costs for providing captioning versus audio description can be more clearly seen in Table 25. Under Option 1, costs for captioning are projected to range from \$140 million to \$190 million over the 15 years, depending on the baseline scenario, while costs for audio description under the same baseline scenario and same timeframe are estimated to reach \$37 million.

Table 25: Total Costs Under Option 1, Alternate Baseline Scenarios (Discounted at 7 Percent, 15-year Time Horizon)

Costs	TOTAL 15 Year Costs	TOTAL 15 Year Costs	TOTAL 15 Year Costs
	Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	Under Baseline 2 Assumptions – Litigation-Based (millions \$)	Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
Total Captioning Costs (Digital and Analog)	\$188.9	\$154.9	\$140.9
Total Audio Costs (Digital and Analog)	\$36.9	\$36.9	\$36.9
TOTAL Captioning and Audio Description Costs	\$225.9	\$191.9	\$177.8

**Totals may not sum due to rounding*

The RA estimates per-facility costs for each theater size type. The largest costs per year for any single movie theater with digital projection would occur in the first year due to the purchase of necessary equipment. The first year capital costs for digital Megaplex theaters (those with 16 or more screens and, for the purpose of the analysis, an average of 18 screens) are estimated to average approximately \$38,547, while comparable costs for digital single screen theaters would average \$3,198 (Table 26).

Table 26: Per Theater Initial Capital Costs for Digital Theaters *

Digital Theater Type/Size	Per Theater Initial Capital Costs (Using Doremi Technology for Movies in Digital Format)	Per Theater Initial Capital Costs (Using USL Technology for Movies in Digital Format)	Average Initial Capital Costs for Digital Theater (Average of Different Technology)
Megaplex	\$40,540	\$36,554	\$38,547
Multiplex	\$27,880	\$25,798	\$26,839
Miniplex	\$10,920	\$10,252	\$10,586
Single Screen	\$3,285	\$3,111	\$3,198

Note: These costs include the costs to purchase and install: (1) captioning hardware and/or software (one per screen); (2) individual devices for captioning (ranging from 4 for Single Screens to 34 for Megaplexes); (3) additional hardware, if needed, to transmit audio description (from none to one device per screen); and (4) additional audio description listening devices (ranging from 2 for Single Screens to 18 for Megaplexes).

*Because unit costs for captioning and audio description equipment have either remained steady or declined between 2010 and 2013, they are assumed to remain constant from 2013 (when last researched) to 2015, when the final rule is expected to be published.

Should the Department proceed under Option 1 and cover analog screens, costs for analog theaters would be higher than those for digital theaters for each type/size. The first year costs for analog single screen theaters would total a little more than \$8,172 (Table 27). The first year costs for digital single screen theaters would average \$3,198 (Table 26). There are no costs for analog theaters under Option 2.

Table 27: Per Theater Initial Capital Costs for Analog Theaters *

Analog Theater Type/Size	Per Theater Initial Capital Costs (Rear Window Technology for Analog Films)
Megaplex**	NA
Multiplex**	NA
Miniplex	\$31,884
Single Screen	\$8,172

Note: These costs include the costs to purchase and install: (1) captioning hardware and/or software (one per screen); (2) individual devices for captioning (ranging from 4 for Single Screens to 12 for Miniplexes); (3) additional hardware, if needed, to transmit audio description (from none to one device per screen); and (4) additional audio description listening devices (ranging from 2 for Single Screens to 4 for Miniplexes).

*Because unit costs for captioning and audio description equipment have either remained steady or declined between 2010 and 2013, they are assumed to remain constant from 2013 (when last researched) to 2015, when the final rule is expected to be published.

**Note that the RA assumes that all Megaplexes and Multiplexes have transitioned to digital projection systems.

5. Benefits

A large number of Americans have vision or hearing disabilities, to varying degrees. The Department believes that this rule will benefit persons who are deaf or hard of hearing or are blind or have low vision, as well as those with moderate hearing loss, who do not currently have consistent access to movie theaters that exhibit movies with closed captioning and audio description. Many individuals with hearing loss have difficulty discriminating among competing sounds in movies and understanding what it is they hear, even if they can hear those sounds. Sounds from other patrons can also interfere with the ability of a patron with partial hearing loss to understand all the dialogue in a movie. Other individuals have difficulty understanding what is being said if the actors speak with accents or have poor enunciation, and those patrons who rely even partly on lip reading will miss some dialogue because they cannot always see the actor's face. Individuals with hearing loss, who have some level of improved hearing comprehension aided by hearing aids, middle ear implants, and cochlear implants, may also experience the same difficulty discriminating among competing sounds in the movie environment.³¹

The individuals who will *directly* benefit from this rule are those persons with hearing or vision disabilities who, as a result of this rule, would be able for the first time to attend movies with closed captioning or audio description in theaters across the country on a consistent basis. Individuals who will *indirectly* benefit from this rule are the family and friends of persons with hearing and vision disabilities who would be able to share the movie-going experience more fully with their friends or loved ones with hearing and vision disabilities.

The benefits of this rule are difficult to quantify for multiple reasons, including the following: (1) the Department has not been able to locate robust data on the rate at which persons with disabilities currently go to movies shown in movie theaters, (2) the fact that the number of persons with disabilities who will newly go to movies will change, (3) the number of persons with disabilities who will go to movies more often will change, (4) the number of persons who will go to the movies as part of a larger group that includes a person with a disability will change, and (5) the number of persons with disabilities who would have gone to the movies anyway but under the rule will have a fuller and more pleasant experience will also change—all of which will change by an unknown amount. In addition, the Department does not know precisely how many movie theaters currently screen movies with closed captioning and audio description, or how many people with hearing or vision disabilities currently have consistent

³¹ “While many people tend to think that the only factor in hearing loss is loudness, there are actually two factors involved: loudness and clarity.” See the NPRM for a fuller discussion, and *Facing the Challenge, A Survivor’s Manual for Hard of Hearing People*, Understanding your audiogram, Hearing Loss Association of Oregon Revised Fourth Edition, Spring 2011, at 8, available at http://www.hearinglossor.org/survivor_manual.pdf (last visited July 10, 2014).

access to movie theaters that provide closed captioning and audio description. Finally, the Department is not aware of any peer reviewed academic or professional studies that monetize or quantify the societal benefit of providing closed captioning and audio description at movie theaters.

Data on movie-going patterns of persons who are deaf or hard of hearing or are blind or have low vision is limited, making estimations of demand very difficult. However, numerous public comments suggest that many persons who are deaf or hard of hearing or are blind or have low vision do not go to the movies at all, or attend movies well below the national average of 4.1 annual admissions per person, because of the lack of auxiliary aids and services that would allow them to understand and enjoy the movie.

Though we cannot confidently estimate the likely number of people who would directly benefit from this proposed rule, we have reviewed data on the number of people with hearing or vision disabilities in the United States. The Census Bureau estimates that 3.3 percent of the U.S. population has difficulty seeing, which translates into a little more than eight million individuals in 2010, and a little more than two million of those had “severe” difficulty seeing.³² At the same time, the Census Bureau estimates that 3.1 percent of people had difficulty hearing, which was a little more than 7.5 million individuals in 2010, and approximately one million of them having “severe” difficulty hearing. Not all of these people would benefit from this proposed rule. For example, some people’s hearing or vision disability may not be such that they would need closed captioning or audio description. Some people with hearing or vision disabilities may not use the equipment for a variety of reasons, including finding the equipment uncomfortable to use. Some people with hearing or vision disabilities may already have consistent access to theaters that screen all their movies with closed captioning and audio description. And some theaters may not provide closed captioning and audio description for all their movies because it would be an undue burden under the ADA to do so. Meanwhile, some people with hearing or vision disabilities would not attend public screenings of movies even if theaters provided closed captioning and audio description simple because they do not enjoy going out to the movies—just as is the case among persons without disabilities.³³

³² The Census defines difficulty seeing as “experiencing blindness or having difficulty seeing words or letters in ordinary newsprint even when normally wearing glasses or contact lenses.” It defines difficulty hearing as “experiencing deafness or having difficulty hearing a normal conversation, even when wearing a hearing aid “ See U.S. Census Bureau, U.S. Department of Commerce, P70-131, *Americans with Disabilities: 2010 Household Economic Studies* at 8 (2012), available at <http://www.census.gov/prod/2012pubs/p70-131.pdf> (last visited July 10, 2014).

³³ In 2012, a little more than two thirds (68 percent) of the U.S. and Canadian population over two years old went to a movie at a movie theater at least once that year. See Motion Picture Association of America, *Theatrical Market Statistics* (2012), available at <http://www.mpa.org/wp-content/uploads/2014/03/2012-Theatrical-Market-Statistics-Report.pdf> (last visited July 10, 2014).

In recent years, a large number of movie theaters have already invested in equipment to provide closed captioning and audio description. As noted earlier in this Regulatory Assessment, NATO estimates that 53 percent of digital screens are already captioning and audio description enabled. Therefore, a large number of persons with hearing or vision disabilities may already have access to movies screened with captioning and audio description. The Department considered using the data on the number of already accessible movie theaters to estimate benefits, but notes that this figure would not necessarily translate into an estimate that about half (or 53 percent) of persons who are deaf or hard of hearing or are blind or have low vision are now benefiting from captioning or audio description. There are multiple reasons why, even if we accept this estimate of the current availability of captioning and audio description, it does not translate into direct benefits for all those who could benefit. These reasons include the following: (1) only some screens at some theaters may have closed captioning and audio description capabilities and those may not be showing the movie the person wants to see; (2) the theater may not be showing the desired movie with captions and audio description on a convenient day and time; (3) the theater may be located much farther away from where the person with a disability resides than other, less accessible theaters, which may result in a decision not to go to a movie theater at all; or (4) a person may live in a community that has theaters with closed captioning and audio description capability, but may travel (for vacation, to visit relatives, for work, or other reasons) to a community that does not have theaters that are captioning and audio description enabled.

Meanwhile, not only is the estimate of the number of who might directly benefit from the proposed rule uncertain, but the individual benefits are not uniform because persons who are deaf or hard of hearing or are blind or have low vision are likely to benefit from this proposed rule in different ways and realize benefits in amounts. The type and amount of benefits can depend on personal circumstances and preferences, as well as proximity to movie theaters that otherwise would not offer captioning or audio description but for this proposed rule. Some persons with vision and hearing disabilities have effectively been precluded from going to movies at theaters because the only theaters available to them did not offer closed captioning or audio description, offered open captioning but only at inconvenient times (such as the middle of the day during the week), or offered captioning or audio description for only a few films and not for every screening of those films. For these persons, the primary benefit will be the ability to see movies when released in movie theaters along with other movie patrons, which they otherwise would not have had the opportunity to do. They will have the value of that movie-going experience, as well as the opportunity to discuss the film socially at the same time as the rest of the movie-viewing public. The amount of benefits experienced by a person with a hearing or vision disability who previously had no access to a theater that provided closed captioning or audio description at all its screenings will be different than the amount experienced by a person with a hearing or vision disability who previously had access to a theater that did consistently provide closed captioning and audio description at its screenings. In addition, the amount of benefits from this rule experienced by a person who cannot follow a movie at all without the assistance of closed captioning is likely to be greater than the amount of benefits

experienced by a person who can follow parts of a movie without the assistance of closed captioning.

There is a social value in movie viewing for many people, not just an entertainment value. As noted above in Section 1, movies are a part of our shared cultural experience, “water cooler” talk, and the subject of lunch-time conversations. The Supreme Court observed over 60 years ago that motion pictures “are a significant medium for the communication of ideas” and “may affect public attitudes and behavior in a variety of ways, ranging from direct espousal of a political or social doctrine to subtle shaping of thought which characterizes all artistic expression. The importance of motion pictures as an organ of public opinion is not lessened by the fact that they are designed to entertain as well as to inform.”³⁴ When individuals who are deaf or hard of hearing or blind or have low vision have the opportunity to attend movies that they can actually understand because of the availability of captions or audio description, they are exposed to new ideas and gain knowledge that contributes to the development of their communication and literacy.

As previously mentioned, some persons with vision and hearing disabilities may already have access to some movie theaters with captioning and/or audio description capabilities, but that access may be limited to only some locations, theaters, and times. Some of these people may be patronizing movie theaters now, but less often than they otherwise would, and less often than they would like, if movie captioning or audio description were available consistently across all theaters. These people may see more movies and/or save time they currently must spend monitoring those few accessible theaters or showings and perhaps additional time coordinating trips to the movie with family and friends. If all theaters are accessible to those who are deaf or hard of hearing or blind or have low vision, then some persons will now have greater choice among multiple locations and can make choices based on other criteria such as location, times, and other amenities, just as Americans without these disabilities already do.

In addition to the *direct* beneficiaries of the proposed rule discussed above, others may be *indirect* beneficiaries of this rule. Family and friends of persons with these disabilities who wish to go to the movies together as a shared social experience will now have greater opportunities to do so. More adults who visit elderly parents with hearing or sight limitations would presumably be able to take their parents on outings and enjoy a movie at a theater together, sharing the experience as they may have in the past. The Department received numerous comments from individuals who are deaf, hard of hearing, blind, or have low vision in response to its 2010 Advance Notice of Proposed Rulemaking on Movie Captioning and Video Description in Movie Theaters, 75 FR 43467, (July 26, 2010) (2010 ANPRM), describing how they were unable to take part in the movie-going experience with their friends and family because of the

³⁴ *Joseph Burstyn, Inc. v. Wilson*, 343 U.S. 495, 501 (1952).

unavailability of captioning or audio description. Many individuals felt that this not only affected their ability to socialize and fully take part in family outings, but also deprived them of the opportunity to meaningfully engage in the discourse that often surrounds movie attendance. Parents with disabilities also complained that they could not answer their children's questions about a movie they saw together because the parents did not understand what had happened in the movie.

There is also an equity and distributional benefit of this proposed rule, as some areas are more likely to have theaters with captioning and audio description capabilities than others. As noted in the NPRM, it is the Department's understanding that persons who live in communities served only by smaller regional movie theater chains are far less likely to have access to captioned and audio described movies than individuals with disabilities who live in California, Arizona, or any of the major cities with theaters operated by Regal, Cinemark, or AMC.³⁵ Thus, it is possible that more urban areas, or certain cities or states, may have greater accessibility than others, creating or exacerbating geographical differences in opportunities.

Moreover, while not formally quantified, it is fully expected that this guarantee of access to movies screened at movie theaters for individuals with hearing or vision impairments will spur some level of new demand for movie attendance and, therefore, lead to increased box office receipts. Unfortunately, there is little data on the demand for movie-viewing in places of public accommodation by persons who are deaf or hard of hearing or blind or have low vision, and as such preparing robust estimates of the increase in movie theater attendance is difficult. We seek public input on this issue.

Because the proposed rule will be setting specific standards for effective communication at movie theaters, it should also lead to a decrease or near elimination of confusion regarding what accommodations are required by movie theaters. The current ADA title III regulation does not contain explicit requirements specifying how movie theaters should meet their effective communication obligations, and this is one of the reasons behind the multiple private lawsuits filed throughout the country. Setting explicit requirements at the national level will lead to harmonization across the country.

And finally, there are additional benefits of the proposed rule that relate to equity and fairness considerations generally. *See* Exec. Order 13563 § 1(c) (underscoring the importance of agency consideration of benefits "that are difficult or impossible to quantify, including equity, human dignity, [and] fairness"). The Department expects that the proposed regulation will allow

³⁵ The Department bases this belief on its review of the information provided by Captionfish, which is a nationwide search engine that monitors which theaters offer both closed and open captions and audio description, and updates its website regularly. *See* Captionfish "Frequently Asked Questions," available at <http://www.captionfish.com/faq> (last visited July 10, 2014).

for better integration of persons with disabilities into the American social mainstream. Indeed, several individuals with disabilities who commented on the ANPRM noted that they had not attended a movie theater in decades—or, for some, during their entire lifetimes—because the lack of auxiliary aids and services makes the movie unintelligible. Other commenters noted that movie theaters’ common practice of exhibiting captioned or audio described movies only at off-peak days and times made them feel like “second class citizens.”

The most significant benefits of the rule relate to issues of fairness, equity, and equal access, all of which are extremely difficult to monetize, and the Department has not been able to robustly quantify and place a dollar value on those. Regardless, the Department believes the non-quantifiable benefits justify the costs of requiring captioning and audio description at movie theaters nationwide.

6. Alternatives Considered

The Department considered multiple alternatives for this rulemaking. Among those weighed most heavily for the proposed rule are the two discussed below. (Annual estimates are provided in the Appendix.)

Requiring only 50 Percent of Screens to Have Closed Captioning and Audio Description

The Department considered proposing limiting the requirement for closed captioning and audio description to only 50 percent of movie screens at each theater. This alternative was discussed in the July 26, 2010, ANPRM. Because the ADA requires places of public accommodation “to ensure that no individual with a disability is excluded, denied services, segregated or otherwise treated differently than other individuals because of the absence of auxiliary aids and services, unless the entity can demonstrate that taking such steps would fundamentally alter the nature of the good, service, facility, privilege, advantage, or accommodation being offered or would result in an undue burden,” 42 U.S.C. §12182(b)(2)(A)(iii), it would be inappropriate to only require access to 50 percent of movies being shown. After considering public comment and additional research, the Department has determined that it is not feasible for movie theaters to meet their ADA obligation to provide equally effective communication to patrons with hearing and vision disabilities, unless they have the capacity to show the movies that are available with captions and audio description at all showings when those same movies are available to patrons without disabilities. Unless a movie theater showed every movie on two screens in comparable auditoriums at all times—one screen showing the captioned and audio described version and the other showing the same movie without captions and audio description—the Department is concerned that a 50 percent requirement would regularly lead to the circumstance where a movie theater would have a captioned or audio described movie, but would have no screen available on which to show it because all the appropriately equipped auditoriums would be otherwise in use.

The Department considered whether it would be possible for movie theaters to meet their effective communication obligations by switching movies into auditoriums equipped to show movies with closed captions and audio description when a patron with a hearing or vision disability needed those accessibility features. But, the Department's research indicated that the business agreements regarding movie exhibitions limit this type of flexibility. Movie theaters regularly negotiate with film distributors regarding which auditoriums in a theater with more than one screen will show which films. Generally, if a film is expected to be very popular, it will open in the largest auditorium or in several auditoriums within the same complex. As the popularity decreases, the film will be moved from larger auditoriums to smaller auditoriums and from multiple auditoriums to a single auditorium. The timing of such moves will vary from theater to theater and from film to film.

Those theaters that do have the flexibility to switch auditoriums upon request to provide closed captioning or audio description would have other added costs associated with changing the auditoriums for showings. Costs could include the additional employee time and resources needed to physically switch the movie from one auditorium to another, as well as potential lost ticket sales if a more popular movie is displaced into a much smaller theater that sells out faster. Additionally, switching auditoriums to allow use of captioning or audio description equipment may result in auditorium changes for other patrons after they had purchased tickets and are possibly already seated. This would result in an inconvenience to many patrons, including the possibility that the switch would result in a different viewing experience than expected when purchasing a ticket due to differing auditorium sizes and comfort levels.

The Department also believes that this alternative would carry a much higher litigation risk. Patrons with disabilities would not have any way of assessing whether the failure to show a particular movie with closed captions and audio description was because the theater was failing to comply with its obligations under the regulation to provide these auxiliary aids and services or because that particular movie was not available with closed captions or audio description. Whether a theater had the capacity to move a film to accommodate a patron with a disability and should have done so upon request, or whether the theater did everything to meet its obligations under the regulation, would become murky and create confusion that could result in an increased risk of litigation.

Finally, this alternative favors larger movie theaters and disadvantages single screen theaters, which are more likely to be small businesses. Under a 50 percent requirement, at least one auditorium at every theater must have closed captioning and audio description capabilities. Thus, single screen theaters would see no reduction in costs under this alternative.

As such, the Department has rejected this alternative due to concerns that requiring only 50 percent of screens to have closed captioning and audio description capabilities would not comply with the ADA itself, that this approach would require substantial changes to the movie theater business model, that the initial perceptions that this approach would have substantially

lower total costs are actually misleading, and that this approach would not address in any meaningful way the concerns for small business single screen theaters.

The discounted total costs for the 50 percent compliance alternative are displayed in the Table 28 and Table 29 below. Total costs for this alternative range from \$101.9 million to \$117.5 million under Option 1 and \$76.8 million to \$92.4 million under Option 2 when using a 7 percent discount rate. These costs, however, do not take account of the potential administrative costs and burdens and potential loss of revenue discussed above.

Table 28: Total Costs Under Option 1 (50% Compliance Requirement) (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL 15 Year Costs	TOTAL 15 Year Costs	TOTAL 15 Year Costs
	Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	Under Baseline 2 Assumptions – Litigation-Based (millions \$)	Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$117.5	\$108.9	\$101.9
3%	\$144.4	\$134.3	\$126.0

Table 29: Total Costs Under Option 2 (50% Compliance Requirement) (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL 15 Year Costs	TOTAL 15 Year Costs	TOTAL 15 Year Costs
	Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	Under Baseline 2 Assumptions – Litigation-Based (millions \$)	Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$92.4	\$83.8	\$76.8
3%	\$112.8	\$102.7	\$94.4

Compliance by Analog Theaters Required in Two Years

The Department considered providing theaters with analog screens two years after the rule’s publication date to become compliant, as opposed to the six months compliance date provided for digital screens. This delay was considered for analog movie screens because such a large number of theaters are in the midst of transitioning to digital cinema, that additional time might be necessary. In addition, the delayed compliance date would allow small theaters that

remain analog more time to obtain the necessary resources to purchase the equipment to provide closed captioning and audio description. Table 30 below presents the 15 year, discounted costs under this alternative. These costs, which range from \$189.4 million to \$237.5 million under a 7 percent discount rate, are higher than the total costs for the proposed rule.

Table 30: Total Costs (2 Year Compliance Date), (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL 15 Year Costs	TOTAL 15 Year Costs	TOTAL 15 Year Costs
	Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	Under Baseline 2 Assumptions – Litigation-Based (millions \$)	Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$237.5	\$203.5	\$189.4
3%	\$286.5	\$246.4	\$229.8

As previously discussed, the movie theater industry is currently undergoing significant changes, among them is the near elimination of analog films for exhibition. Small theaters that still have analog projection are more likely to have fewer financial resources than other theaters. At the same time, smaller theaters are facing other market pressures, evidenced by an average annual decline of 4.2 percent in their numbers in recent years (see Table 11).

Due to the uncertainty surrounding the future of analog film and the market pressures that small analog theaters currently face, the Department rejected this alternative.. As discussed earlier, the Department is now proposing two options for analog screens: Option 1— a four year compliance date; or Option 2— deferral of application of the requirements of the rule to analog screens until a later date.

7. Results

This Initial RA estimates the costs and benefits of the proposed rule for revising the ADA title III regulation concerning movie captioning and audio description. Using industry data on theater characteristics and manufacturer’s prices (see Section 4 for details), the Initial RA estimates that under Option 1, total costs for all theaters during the entire 15 years following the publication of the final rule will likely range from **\$177.8 million to \$225.9 million** when using a 7 percent discount rate, and from **\$219.0 million to \$275.7 million** when using a 3 percent discount rate. Under Option 2, total costs for all theaters during the entire 15 years following publication of the final rule will likely range from **\$138.1 million to \$186.2 million** when using a 7 percent discount rate, or from **\$169.3 million to \$226.0 million** when using a 3 percent discount rate. These range of cost estimates depend on the assumptions used regarding the extent to which theaters are or soon will be providing closed movie captioning and audio

description as proposed in this rule, but independent of this rulemaking (see Section 4.2 for details on the baseline scenarios), as seen in Table 31 and Table 32.

Table 31: Estimated Costs Under Option 1 (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL Costs - 15 Years Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	TOTAL Costs - 15 Years Under Baseline 2 Assumptions – Litigation-Based (millions \$)	TOTAL Costs - 15 Years Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$225.9	\$191.9	\$177.8
3%	\$275.7	\$235.6	\$219.0

Table 32: Estimated Costs Under Option 2 (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL Costs - 15 Years Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	TOTAL Costs - 15 Years Under Baseline 2 Assumptions – Litigation-Based (millions \$)	TOTAL Costs - 15 Years Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$186.2	\$152.2	\$138.1
3%	\$226.0	\$186.0	\$169.3

These estimated costs consist of (1) the purchase of hardware and/or software to send the captions to individual captioning devices; (2) the purchase of individual captioning devices as per the scoping requirements specified in the rule; (3) periodic costs to replace hardware, software and devices; (4) annual operations and maintenance costs to cover any storage and management, training, and other recurring costs; (5) any additional hardware costs to transmit audio description to individual devices; and (6) the costs to purchase additional individual audio description listening devices, if needed. These costs are estimated over a 15 year period, beginning in the first year after publication of the final rule for digital theaters (2015), and in addition, beginning in the fourth after publication of the final rule for analog theaters (2018) under Option 1.

Under Option 1, the estimated annualized costs of the proposed regulation under each of the three possible baseline scenarios range from **\$19.5 million to \$24.8 million** when using a 7 percent discount rate, or from **\$18.3 million to \$23.1 million** when using a 3 percent discount rate. Under Option 2, the estimated annualized costs of the proposed regulation under each of the three possible baseline scenarios range from **\$15.2 million to \$20.4 million** when using a 7

percent discount rate, or from **\$14.2 million to \$18.9 million** when using a 3 percent discount rate. (See Table 33).³⁶

Table 33: Annualized Costs and Benefits of Proposed Rule (2015 Dollars, 15-year Time Horizon)

	7% Discount Rate			3% Discount Rate		
	Baseline 1 Assumptions (One Screen Per-Theater)	Baseline 2 Assumptions (Litigation-Based)	Baseline 3 Assumptions (NATO Survey Based)	Baseline 1 Assumptions (One Screen Per-Theater)	Baseline 2 Assumptions (Litigation-Based)	Baseline 3 Assumptions (NATO Survey Based)
Costs (million \$)	Option 1 – Four Year Compliance for Analog Theaters					
	\$24.8	\$21.1	\$19.5	\$23.1	\$19.7	\$18.3
	Option 2 – Deferred Rulemaking for Analog Theaters					
	\$20.4	\$16.7	\$15.2	\$18.9	\$15.6	\$14.2
Benefits	The proposed rule would address the discriminatory effects of communication barriers at movie theaters encountered by individuals who are deaf or hard of hearing or are blind or have low vision. By ensuring that movie theaters screen those movies that are produced and distributed with the necessary auxiliary aids and services—captioning and audio description—and that theaters provide the individual devices needed to deliver these services to patrons with these particular disabilities, this rule would afford such individuals an equal opportunity to attend movies and follow both the audio and visual aspects of movies exhibited at movie theaters. Although the Department is unable to monetize or quantify the benefits of this proposed rule, it would have important benefits. For example, it would provide people with hearing and vision disabilities better access to the movie viewing experience enjoyed by others; it would allow such persons to attend and enjoy movies with their family members and acquaintances; it would allow people with hearing or vision disabilities to participate in conversations about movies with family members and acquaintances; and it would promote other hard to quantify benefits recognized in Executive Order 13563 such as equity, human dignity, and fairness.					

Costs are estimated for each year and are not expected to exceed \$100 million in any year under either of three baseline scenarios, regardless of whether the Department adopts Option 1 or

³⁶ Annualized costs were calculated in a Microsoft Excel model using the PMT function ($-PMT(\text{discount rate}, \text{years of analysis}, \text{present value of total costs})$).

Option 2. The greatest single-year costs occur in the first year following the expected publication of the final rule and range from approximately \$50 million under the NATO Survey-Based Baseline to just under \$80 million under the One Screen Per-Theater Baseline (see Figure 3 on page 38). Based on these estimates, the Department concludes that its proposed rule for movie captioning and audio description, as currently drafted, does not represent an economically “significant” regulatory action.³⁷

The costs of the requirement to provide captioning is significantly higher than the costs to provide audio description (see Table 25 on page 42). Over 15 years, the costs to provide captioning range from \$140 million to \$190 million, depending on the baseline scenario, while the costs to provide audio description are estimated to reach \$37 million.

As previously discussed, the benefits of this rule are difficult to quantify for multiple reasons. Individuals who will *directly* benefit from this rule include those persons with hearing or vision disabilities who, as a result of this rule, would be able for the first time to attend and fully experience movies with closed captioning or audio description in theaters across the country on a consistent basis. Such access would allow these people to attend and enjoy movies with their family members, friends, and acquaintances, and enable them to participate in conversations about movies with other individuals. If all theaters are accessible to those who are deaf or hard of hearing or blind or have low vision, then some persons will now have greater choice among multiple locations and can make choices based on other criteria such as location, times, and other amenities, just as Americans without these disabilities already do.

Though we cannot confidently estimate the likely number of people who would directly benefit from this proposed rule, we have reviewed data on the number of people with hearing or vision disabilities in the United States. The Census Bureau estimates that 3.3 percent of the U.S. population has difficulty seeing, which translates into a little more than eight million individuals in 2010, and a little more than two million of those had “severe” difficulty seeing.³⁸ At the same time, the Census Bureau estimates that 3.1 percent of people had difficulty hearing, which was a little more than 7.5 million individuals in 2010, and approximately one million of them having “severe” difficulty hearing. In addition, there are an unknown number of *indirect* beneficiaries of this rule. These indirect beneficiaries are those family and friends of persons with these

³⁷ See Exec. Order 12,866 §§ 3(f)(1), 6(a)(3)(C) defining economically “significant” in terms of, among other things, regulatory actions having “an annual effect on the economy of \$100 million or more”.

³⁸ The Census defines difficulty seeing as “experiencing blindness or having difficulty seeing words or letters in ordinary newsprint even when normally wearing glasses or contact lenses.” It defines difficulty hearing as “experiencing deafness or having difficulty hearing a normal conversation, even when wearing a hearing aid.” See U.S. Census Bureau, U.S. Department of Commerce, P70-131, *Americans with Disabilities: 2010 Household Economic Studies* at 8 (2012), available at <http://www.census.gov/prod/2012pubs/p70-131.pdf> (last visited July 10, 2014).

hearing and vision disabilities who wish to go to the movies as a shared social experience who will have greater opportunities to do so as a result of this rule.

The most significant benefits of the rule, however, relate to issues of fairness, equity, and equal access, all of which are extremely difficult to monetize, and the Department has not been able to robustly quantify and place a dollar value on those. Regardless, the Department believes the non-quantifiable benefits justify the costs of requiring captioning and audio description at movie theaters nationwide.

Sensitivity Analysis

The Department was able to find robust data regarding the costs of purchasing and installing closed captioning and audio description equipment, the number of theaters in the country and their total number of screens, the expected growth (and decline) rates of movie theaters by type, and a few other critical variables. However, it has not found concrete data to estimate operations and maintenance costs for closed captioning and audio description equipment or the administrative or training costs associated with the requirements of this rule. No substantive comments with data on these costs were received in public comments to the NPRM either.

Therefore, the Department has conducted a sensitivity analysis with two alternative rates—5 percent and 8 percent—for calculating O&M costs, and is also asking for public comment on these costs. These rates are percentages of purchase costs and represent standard rates for O&M used by cost estimators in construction and design/engineering, and were also used in the Department’s Regulatory Impact Analysis of the Final Revised Regulations Implementing Titles II and III of the ADA (Sept. 15, 2010).³⁹

Table 34, Table 35, Table 36 and Table 37 present the total costs for the proposed rule when using 5 percent and 8 percent of purchase costs to estimate annual operations and maintenance. These costs are somewhat higher than the total discounted 15-year costs which assume a 3 percent for O&M costs. Those costs range from \$177.8 million to \$225.9 million under Option 1 using a 7 percent discount rate(see Table 31). However, if a 5 percent rate is used to calculate O&M costs, the proposed rule’s total costs over 15 years (using a 7 percent discount rate) range from \$199.7 million to \$247.8 under Option 1, depending on the baseline. If an 8 percent rate is used to calculate O&M costs, the proposed rule’s total costs over 15 years (using a 7 percent discount rate) range from \$232.7 million to \$280.8 under Option 1, depending on the baseline.

³⁹ See Appendix I: Operations and Maintenance, for more information on standard O&M costs, and these sources from which those were derived.

Table 34: Total Costs Under Option 1 (5% O&M) (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL 15 Year Costs (5% O&M) Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	TOTAL 15 Year Costs (5% O&M) Under Baseline 2 Assumptions – Litigation-Based (millions \$)	TOTAL 15 Year Costs (5% O&M) Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$247.8	\$213.8	\$199.7
3%	\$303.9	\$263.8	\$247.2

Table 35: Total Costs Under Option 2 (5% O&M) (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL 15 Year Costs (5% O&M) Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	TOTAL 15 Year Costs (5% O&M) Under Baseline 2 Assumptions – Litigation-Based (millions \$)	TOTAL 15 Year Costs (5% O&M) Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$204.3	\$170.3	\$156.2
3%	\$249.1	\$209.1	\$192.4

Table 36: Total Costs Under Option 1 (8% O&M) (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL 15 Year Costs (8% O&M) Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	TOTAL 15 Year Costs (8% O&M) Under Baseline 2 Assumptions – Litigation-Based (millions \$)	TOTAL 15 Year Costs (8% O&M) Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$280.8	\$246.8	\$232.7
3%	\$346.2	\$306.2	\$289.6

Table 37: Total Costs Under Option 2 (8% O&M) (2015 Dollars, 15-year Time Horizon)

Discount Rate	TOTAL 15 Year Costs (8% O&M) Under Baseline 1 Assumptions - One Screen Per-Theater (millions \$)	TOTAL 15 Year Costs (8% O&M) Under Baseline 2 Assumptions – Litigation-Based (millions \$)	TOTAL 15 Year Costs (8% O&M) Under Baseline 3 Assumptions – NATO Survey Based (millions \$)
7%	\$231.5	\$197.5	\$183.4
3%	\$283.8	\$243.7	\$227.1

When using a 5 percent rate to estimate different operations and maintenance costs, annual costs never rise above \$80 million in any single year under the One-Screen Per Theater Baseline, above \$61 million in any single year under the Litigation-Based Baseline, or \$53 million in any single year under the NATO Survey-Based Baseline. When using an 8 percent rate to estimate operations and maintenance costs, annual costs never rise above \$83 million in any single year under the One-Screen Per Theater Baseline, above \$63 million in any single year under the Litigation-Based Baseline, or \$55 million in any single year under the NATO Survey-Based Baseline. (Detailed annual estimates are presented in the Appendix.)

8. Summary of Initial Regulatory Flexibility Analysis⁴⁰

Consistent with the provisions of the Regulatory Flexibility Act, the Department has also carefully considered the likely impact of the proposed regulation on small businesses in the movie exhibition industry. *See* RFA § 605(b); Presidential Memorandum, “Regulatory Flexibility Small Business, and Job Creation,” 76 FR 3827 (Jan. 21, 2011). The Department has determined that this proposed rule will have a significant economic impact on a substantial number of small businesses.

For motion picture theaters, small businesses comprise the vast majority of firms in the industry. The current size standard for a small movie theater business is \$35.5 million dollars in annual revenue. In 2007, the latest year for which detailed breakouts by industry and annual revenue are available, approximately 98 percent of movie theater firms met the standard for small business, and these firms managed approximately 53 percent of movie theater establishments.⁴¹ As noted earlier, the Department is considering two options for analog screens. Option 1 would delay the compliance date for analog screens for four years after publication of the final rule. Option 2 would defer rulemaking altogether for analog screens until a later date. The IRFA estimates for Option 1 the average initial capital costs per firm for firms that display digital or analog movies. The average costs for small firms were between approximately 0.7 percent to 2.1 percent of their average annual receipts for firms with digital theaters, and between approximately 2.0 percent to 5.7 percent of average annual receipts for firms with analog theaters. The Department has used the IRFA to examine other ways, if possible, to accomplish the Department’s goals with fewer burdens on small businesses. The vast majority of theaters with analog screens are small businesses, and the Department believes that both of the options for analog screens under consideration in the proposed rule will result in fewer burdens on small movie theater businesses with analog screens.

8.1 Reason for Proposed Rule

As noted earlier in this Initial RA prepared for this rule (see Section 1), the Department’s title III regulation implementing title III’s auxiliary aids provision reiterates the obligation of covered entities to ensure effective communication with individuals with disabilities and identifies, among other things, open captioning, closed captioning, and audio recordings as examples of auxiliary aids and services. 28 CFR 36.303(a)-(c). Recent technological changes in the movie theater industry—including wide-spread conversion from analog (film) projection to digital

⁴⁰ Please see the NPRM for the full Initial Regulatory Flexibility Analysis, which includes questions for public comment.

⁴¹ See U.S. Small Business Administration, *Table of Small Business Size Standards Matched to North American Industry Classification System Codes*. July 22, 2013.

cinema systems—make exhibition of captioned and audio-described movies easier and less costly than before. In addition, at this time nearly all first run motion pictures released by the major domestic movie studios include closed captioning (and to a lesser extent, audio description). Despite this, patrons who are deaf or hard of hearing or are blind or have low vision are often shut out from the movie-going experience and cannot fully take part in movie-going outings with family or friends, join in social conversations about recent movie releases, or otherwise participate in a meaningful way in an important aspect of American culture, because movie theaters do not consistently show those movies with the captioning or audio description.

The Department is thus convinced that regulation is warranted at this time to explicitly require movie theaters to exhibit movies with closed captioning and audio description at all times and for all showings whenever movies are produced, distributed, or otherwise made available with captioning and audio description unless to do so would result in an undue burden or fundamental alteration.

8.2 Objective of Proposed Rule

The proposed rule for captioning and audio description rests on the existing obligation of title III-covered facilities—such as movie theaters—to ensure that persons with disabilities receive “full and equal enjoyment” of their respective goods and services, including, as needed, the provision of auxiliary aids and services for persons who are deaf or hard of hearing or blind or have low vision. The proposed rule states that a movie theater owner or operator is required to exhibit movies with closed captioning and/or audio description for all screenings so long as the movie has been produced by the movie studio or distributor with captioning or audio description (unless doing so would result in an undue burden or fundamental alteration). The proposed rule imposes no independent obligation on movie theaters to provide captions and audio description if the movie is not available with these features.

The Department expects that implementation of the proposed rule will lead to consistent levels of accessibility in movie theaters across the country, and that patrons who are deaf, hard-of-hearing, blind, or have low vision will be able to use captioning and/or audio description equipment to better understand movies being exhibited in all movies theaters.

8.3 Small Business Movie Theaters

The Regulatory Flexibility Act defines a “small entity” as a small business (as defined by the Small Business Administration Size Standards) or a small organization such as a nonprofit that is “independently owned and operated” and is “not dominant in its field.” For motion picture theaters (NAICS Code 512131), small businesses comprise the vast majority of firms in the industry. The current size standard for a small movie theater business is \$35.5 million dollars in annual revenue.

The latest data that includes detailed breakouts by industry and annual revenue are from the 2007 Economic Census.⁴² Data for Motion Picture Theaters (except Drive-Ins) from the 2007 Economic Census is available on both the Small Business Administration’s Web site and the Census Bureau’s American FactFinder Web site.⁴³ Although both datasets are from the 2007 Economic Census, the two datasets contain different estimates of the total number of Motion Picture Theaters. Each dataset is organized to have advantages over the other: the SBA dataset includes a greater number of revenue categories, but the dataset from Census’ FactFinder separates firms that only operated part of the year from those that operated all year. The SBA dataset also has a larger proportion of firms in the lowest revenue categories than the Census FactFinder dataset.⁴⁴

Given differences between the two datasets, the calculations for this analysis have been prepared separately using each dataset. For simplicity of presentation, this IRFA presents the tables showing interim calculations (Table 38 and Table 41) using the dataset from SBA’s Web site only. The table of summary statistics, Table 42, includes estimates calculated using both databases and presented as ranges. Discussions of the range of the rule’s potential impact under Option 1 for small movie theater companies draw from findings using both datasets.

In 2007, approximately 98 percent of movie theater firms met the standard for small business, and these firms managed approximately 53 percent of movie theater establishments (calculated using the dataset from SBA’s website).⁴⁵ Data from the 2007 Economic Census and downloaded from SBA’s Web site, report that 2,004 movie theater firms operated 4,801 establishments that year; of those 2,004 movie theater firms, approximately 1,965 would meet the current SBA standard for a small business (Table 38). These 1,965 firms operated 2,566 establishments.⁴⁶

⁴² The U.S. Small Business Administration’s Office of Advocacy partially funds the Census Bureau to produce data on employer firm size including the number of firms, number of establishments, employment, and annual payroll and annual sales/receipts/revenue for employment size of firm categories by location and industry as part of the Economic Census.

⁴³ SBA’s dataset is available on its page for “Firm Size Data” available at <http://www.sba.gov/advocacy/849/12162> (last visited, July 10, 2014). Detailed data by revenue group is in the excel file under the U.S. Static data section, labeled: “• U.S. data including multiple tables (Microsoft Excel file).” and on the tab labeled “us_rec_detail_ind07.” The dataset from Census can be downloaded from Census’ American FactFinder website, available at <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>, by selecting “Advanced Search,” then “Show Me All” and under Section 1, entering the topic EC0751SSZ4. (Both datasets last visited June 11, 2014.)

⁴⁴ Additional detail on these differences in the datasets is available in the Appendix.

⁴⁵ The size standard of \$35.5 million can be found in *Table of Small Business Size Standards Matched to North American Industry Classification System Codes*. U. S. Small Business Administration. July 22, 2013.

⁴⁶ The dataset downloaded from American FactFinder had fewer firms and establishments: 1,724 firms operating 4,554 establishments.

Table 38: Distribution of Movie Theater Firms, by Revenue, 2007

	Number of firms	Number of establishments	Firms as % of TOTAL	Cumulative total	Establishments % of TOTAL	Cumulative total
Total Firms	2,004	4,801	100%	--	100%	--
Firms with sales/receipts/revenue less than \$100,000	333	333	16.6%	16.6%	6.9%	6.9%
Firms with sales/receipts/revenue of \$100,000 to \$499,999	703	712	35.1%	51.7%	14.8%	21.8%
Firms with sales/receipts/revenue of \$500,000 to \$999,999	318	339	15.9%	67.6%	7.1%	28.8%
Firms with sales/receipts/revenue of \$1,000,000 to \$2,499,999	386	472	19.3%	86.8%	9.8%	38.7%
Firms with sales/receipts/revenue of \$2,500,000 to \$4,999,999	109	197	5.4%	92.3%	4.1%	42.8%
Firms with sales/receipts/revenue of \$5,000,000 to \$7,499,999	40	99	2.0%	94.3%	2.1%	44.8%
Firms with sales/receipts/revenue of \$7,500,000 to \$9,999,999	24	60	1.2%	95.5%	1.2%	46.1%
Firms with sales/receipts/revenue of \$10,000,000 to \$14,999,999	23	106	1.1%	96.6%	2.2%	48.3%
Firms with sales/receipts/revenue of \$15,000,000 to \$19,999,999	13	105	0.6%	97.3%	2.2%	50.5%
Firms with sales/receipts/revenue of \$20,000,000 to \$24,999,999	6	50	0.3%	97.6%	1.0%	51.5%
Firms with sales/receipts/revenue of \$25,000,000 to \$29,999,999	8	79	0.4%	98.0%	1.6%	53.2%
Firms with sales/receipts/revenue of \$30,000,000 to \$34,999,999	2	14	0.1%	98.1%	0.3%	53.4%
Firms with sales/receipts/revenue of \$35,000,000+*	39	2,235	1.9%	100.0%	46.6%	100.0%

Source: Number of firms and number of establishments from Small Business Administration, Statistics of U.S. Businesses, Business Dynamics Statistics, Business Employment Dynamics, and Nonemployer Statistics. <http://www.sba.gov/advocacy/849/12162>. (last visited July 10, 2014). Downloaded from SBA Web site December 2013.

As part of a larger movement within the film producing industry, nearly all (if not all) film production is moving to digital, and most movie theaters likely will convert to the digital format. Because of the cost of transitioning to digital, large firms are more likely to have already converted to digital, or plan to do so soon. For these same reasons, analog theaters are more

likely to be small businesses. At the same time, per screen costs of captioning equipment are significantly higher for analog theaters than for digital theaters.

While the first movie theaters were facilities with a single screen and auditorium, in recent years larger facilities are being built, some with a dozen or more auditoriums and screens each capable of showing movies at the same time. Yet, at this time, many single screen theaters remain open. The Initial RA prepared detailed costs estimates, over time, using four theater size categories based on data presented by the MPAA (see Section 4.3 of the Initial RA for greater detail on these categories). To estimate the costs to small businesses, this IRFA examined the percentages of small businesses, the distribution of theaters and screens by theater size type, and made estimations regarding the likely prevalence of small businesses among each size type (see Table 39). No Megaplexes are expected to be small businesses.

Table 39: Theaters by Type and Estimated Prevalence of Small Businesses

Theater Type	Projected Number of Theaters in 2015	Annual Growth Rate	Likelihood of Small Businesses
Megaplex – 16+ screens	718	2.0%	<i>No small businesses</i>
Multiplex – 8-15 screens	1,893	2.0%	Some small businesses
Miniplex – 2-7 screens	1,500	-4.2%	Many small businesses
Single Screen – 1 screen	996	-4.2%	Nearly all small businesses
TOTAL	5,107	---	

Source: Estimated using data for 2008-2012 as in MPAA’s *Theatrical Market Statistics – 2012*.

The proposed rule does not apply different requirements to firms by size. It does, however, include Option 1 which would delay the compliance date for movie theaters with analog screens to four years after publication of the final rule (while theaters with digital screens must comply within six months). Theaters with analog projection are much more likely to be small businesses than theaters with digital projection.

8.4 Costs of Compliance⁴⁷

While this small business assessment necessarily draws on the Initial RA’s “main” cost model, it also incorporates data specific to small businesses. As required by the Small Business Act and SBA regulations, the cost model underlying the Initial RA’s small business assessment uses SBA-defined small business size standards. The SBA data provided 18 different revenue

⁴⁷ This estimate of costs for small businesses assumes that the Department would proceed under Option 1 (four year compliance date for analog screens).

size categories, 12 of those categories for firms with estimated annual receipts of less than the \$35.5 million size standard for a small firm in this industry (the dataset from Census’ FactFinder had 11 revenue categories). These 18 revenue size categories were consolidated into four categories, with the following three meeting the SBA size standard for a small business: Firms with sales/receipts/revenue of (a) \$499,999 and under; (b) \$500,000-\$4,999,999; and (c) \$5,000,000-\$35,500,000. One of the 18 revenue categories in the SBA dataset (firms with sales/receipts/revenue of \$30,000,000-\$34,999,999) had only two firms included. To prevent the release of proprietary financial information, the SBA dataset only includes the number of firms and their establishments in this category; it does not include any information on sales/receipts or revenues. Therefore, while the estimate of the total number of small businesses that could be impacted by the proposed rule (in section 8.3, Small Business Movie Theaters) includes these two firms, the calculations for costs of compliance by revenue category in this section do not.

This SBA/U.S. Economic Census data, in turn, was incorporated into the Initial RA’s estimation for impacts on small businesses. First, receipt data was used to develop assumptions regarding the distribution of “small businesses” among the four theater size types. The assignment of theater size type is critical to the estimation because it determines the number of screens and, therefore, total costs per establishment.

Using the Initial RA cost model estimation of the number of theaters by size type in 2015 (Table 40), the IRFA distributed the number of establishments of small business movie theater firms beginning with all Single Screen establishments and then applied the remaining portion to Miniplex and Multiplex establishments (Table 40).

Table 40: 2015 Distribution of Theaters (Model Projection)

Theater Size Type	Number of Theaters	Percentage
Megaplex	718	14.1%
Multiplex	1,893	37.1%
Miniplex	1,500	29.4%
Single Screen	996	19.5%
TOTAL	5,107	100%

For this distribution, Single Screen theaters made up 89.6% of establishments in the smallest revenue category. The remaining establishments in this category were assumed to be Miniplexes. All of the establishments with receipts between \$500,000 and \$4,999,999 were assumed to be Miniplex theaters. After allocating those theaters to the two smaller revenue categories, the remaining Miniplex theaters estimated for 2015 were distributed to the largest revenue category. Because there were more theaters in the largest revenue category than the remaining estimated Miniplex theaters, the other theaters in this revenue category were assumed to be all Multiplexes (approximately 41 percent). These distributions are summarized in Table

41. These distributions were then used to estimate the average cost per firm in each of the three consolidated small business revenue categories.

Table 41: Distribution of Theater Size Type for Consolidated Revenue Groups

Consolidated Revenue Group⁴⁸	Theater Size Type
\$499,999 and under	89.6% Single Screen, 10.4% Miniplexes
\$500,000-\$4,999,999	100% Miniplexes
\$5,000,000 to \$35,500,000	58.8% Miniplexes; 41.2% Multiplexes

Using the average costs per theater developed in the Initial RA (see Section 4.11), we were able to calculate the average costs per theater and per firm for the three consolidated revenue groups (\$499,999 and under; \$500,000-\$4,999,999; and \$5,000,000-\$35,500,000). Costs were first calculated on a per-establishment basis, and then using the average number of establishments per firm for each of the three consolidated revenue groups, translated into an average per firm cost. This cost was then compared to the average receipts per firm for that consolidated revenue group.

The resulting ratio of average costs to average receipts ranges from a low of 0.7 percent (for digital firms with revenues of \$5,000,000 to \$35,500,000) to a high of 5.7 percent (for analog firms with revenues of \$499,999 or less) (Table 42). The impact on firms with digital projection is comparatively smaller than the impact on firms maintaining analog projection. The ratio of average costs/receipts is estimated to range from 0.7 percent to 2.1 percent for all movie theater companies using digital systems. In contrast, the same ratio ranges from 2.0 percent to 5.7 percent for all firms using analog projection.

⁴⁸ The distribution is slightly different using the dataset from FactFinder: For firms with revenue \$499,999 and under, 100% were assumed to be Single Screen; for those with revenue \$500,000-\$4,999,999, 7% were Single Screens and 93% Miniplexes; for those with revenue \$5,000,000 to \$35,500,000, 79% were Miniplexes and 21% Multiplexes.

Table 42: Estimation of Costs for Small Digital Movie Theaters, By Firm Size, Based on 2015 Size/Revenue Distribution

Cost	Firms \$499,999 and under	Firms \$500,000 to \$4,999,999	Firms \$5,000,000 to \$35,500,000**
Average receipts per firm*	\$188,384 to \$201,973	\$1,471,549 to \$1,484,995	\$9,705,377 to \$12,437,259
Average cost per theater*	\$3,198 to \$3,966	\$10,063 to \$10,586	\$13,984 to \$17,281
Average cost per firm*	\$3,233 to \$3,992	\$12,539 to \$14,454	\$81,176 to \$103,309
Ratio of average cost/receipts*	1.6% to 2.1%	0.8% to 1.0%	0.7% to 1.1%

Table 43: Estimation of Costs for Small Analog Movie Theaters, By Firm Size, Based on 2015 Size/Revenue Distribution

Cost	Firms \$499,999 and under	Firms \$500,000 to \$4,999,999	Firms \$5,000,000 to \$35,500,000**
Average receipts per firm*	\$188,384 to \$201,973	\$1,471,549 to \$1,484,995	\$9,705,377 to \$12,437,259
Average cost per theater*	\$8,172 to \$10,638	\$30,204 to \$31,884	\$43,449 to \$54,673
Average cost per firm*	\$8,263 to \$10,706	\$37,638 to \$43,534	\$252,224 to \$326,844
Ratio of average cost/receipts*	4.1% to 5.7%	2.5% to 3.0%	2.0% to 3.4%

**The ranges represent the figures calculated using the two datasets created from data from the 2007 Economic Census, which breaks out data by revenue category (downloaded from SBA’s Web site and the Census Bureau’s American FactFinder Web site, respectively), but which differ slightly. Note that the composition of theater size types also varies per revenue group depending on the dataset used, and therefore the average cost per theater varies as well.*

*** Note that the calculations for this category using the dataset downloaded from the SBA Web site do not include any data for the two firms in the revenue category for firms with sales/receipts/revenue of \$30,000,000-\$34,999,999 because no data on annual receipts for those two firms was included. The dataset downloaded from American FactFinder had different revenue categories from those downloaded from SBA’s Web site. To estimate those firms meeting the SBA size standards using the dataset downloaded from the American FactFinder Web site, all the firms with revenues less than \$25 million, and half of those with revenues from \$25,000,000 to \$49,999,999 were counted as a way of estimating the number of entities that fall under \$35.5 million within that revenue category.*

Note: See Appendix for greater detail on calculations.

8.5 Alternatives

The Department considered multiple alternatives for this rulemaking with a focus on choosing the alternative that best balances the requirements of the ADA with the potential costs to small business movie theaters. Among those alternatives weighed most heavily for the proposed rule are the three discussed below. (Annual estimates are provided in the Appendix.)

Requiring only 50 Percent of Screens to Have Closed Captioning and Audio Description

The Department considered proposing limiting the requirement for closed captioning and audio description to only 50 percent of movie screens in each theater. This alternative was discussed in the July 26, 2010, ANPRM. Because the ADA requires places of public accommodation “to ensure that no individual with a disability is excluded, denied services, segregated or otherwise treated differently than other individuals because of the absence of auxiliary aids and services, unless the entity can demonstrate that taking such steps would fundamentally alter the nature of the good, service, facility, privilege, advantage, or accommodation being offered or would result in an undue burden,” 42 U.S.C.

§12182(b)(2)(A)(iii), it would be inappropriate to only require access to 50 percent of movies being shown. After considering public comment and additional research, the Department has determined that it is not feasible for movie theaters to meet their ADA obligation to provide equally effective communication to patrons with hearing and vision disabilities unless they have the capacity to show the movies that are available with captions and audio description at all showings when those same movies are available to patrons without disabilities. Unless a movie theater showed every movie on two screens in comparable auditoriums at all times—one screen showing the captioned and audio described version and the other showing the same movie without captions and audio description—the Department is concerned that a 50 percent requirement would regularly lead to the circumstance where a movie theater would have a captioned or audio described movie, but would have no screen available on which to show it because all the appropriately equipped auditoriums were otherwise in use.

The Department considered whether it would be possible for movie theaters to meet their effective communication obligations by switching movies into auditoriums equipped to show movies with closed captions and audio description when a patron with a hearing or vision disability needed those accessibility features. But, the Department’s research indicated that the business agreements regarding movie exhibitions limit this type of flexibility. Movie theaters regularly negotiate with film distributors regarding which auditoriums in a theater with more than one screen will show which films. Generally, if a film is expected to be very popular, it will open in the largest auditorium or in several auditoriums within the same complex. As the popularity decreases, the film will be moved from larger auditoriums to smaller auditoriums and from multiple auditoriums to a single auditorium. The timing of such moves will vary from theater to theater and from film to film.

Those theaters that do have the flexibility to switch auditoriums upon request to provide closed captioning or audio description would have other added costs associated with changing the auditoriums for showings. Costs could include the additional employee time and resources needed to physically switch the movie from one auditorium to another, as well as potential lost ticket sales if a more popular movie is displaced into a much smaller theater that sells out faster. Additionally, switching auditoriums to allow use of captioning or audio description equipment

may result in auditorium changes for other patrons after they had purchased tickets and are possibly already seated. This would result in an inconvenience to many patrons, including the possibility that the switch would result in a different viewing experience than expected when purchasing a ticket due to differing auditorium sizes and comfort levels.

Importantly, the Department also believes that this alternative would carry a much higher litigation risk. Patrons with disabilities would not have any way of assessing whether the failure to show a particular movie with closed captions and audio description was because the theater was failing to comply with its obligations under the regulation to provide these auxiliary aids and services or because that particular movie was not available with closed captions or audio description. Whether a theater had the capacity to move a film to accommodate a patron with a disability and should have done so upon request, or whether the theater did everything to meet its obligations under the regulation, would become murky and create confusion that could result in an increased risk of litigation.

Finally, this alternative favors larger movie theaters and disadvantages single screen theaters, which are more likely to be all small businesses. Under the 50 percent requirement, at least one auditorium at every theater must have closed captioning and audio description capabilities. Thus, single screen theaters would see no reduction in costs under this alternative.

As such, the Department has rejected this alternative due to concerns that requiring only 50 percent of screens to have closed captioning and audio description capabilities would not comply with the ADA itself, that such a proposal would require substantial changes to the movie theater business model, that the initial perceptions that this approach would have substantially lower total costs are actually misleading, and that this approach would not address in any meaningful way the concerns for small business single screen theaters.

Compliance by Analog Theaters Required in Two Years

The Department considered providing theaters with analog screens two years after the rule's publication date to become compliant, as opposed to the six months compliance date provided for digital screens. This delay was considered for analog movie screens because such a large number of theaters are in the midst of transitioning to digital cinema, that additional time might be necessary. In addition, the delayed compliance date would allow small theaters that remain analog more time to obtain the necessary resources to purchase the equipment to provide closed captioning and audio description. The 15-year, discounted costs for this alternative range from \$189.4 million to \$237.5 million under a 7 percent discount rate, which are higher than the total costs for the proposed rule.

Upon review of the higher cost burden for firms still using analog projection and with consultation from the Small Business Administration's Office of Advocacy, and as previously discussed, the Department is considering two alternative options: (1) a four-year compliance date for theaters with analog screens (Option 1); or (2) deferring compliance for analog screens

until a later date (Option 2). In making the decision, the Department also took into consideration the fact that those movie theaters that have not yet made the transition to digital systems are more likely to be small businesses than those movie theaters that are already exhibiting in digital format. The Department also considered the fact that movie studios are in the process of phasing out analog film, and it is anticipated that by 2015, studios will not be producing analog prints of first run films. On the basis of this information, it appears likely that movie theaters that rely on first run films for revenue will either convert to digital or go out of business before the four year compliance date (sometime in 2018 or 2019), and thus there will actually be many fewer analog theaters that will need to comply with the rule if the Department proceeded under Option 1. If the Department decides to adopt Option 2 for the final rule and defer application of the requirements of the rule for analog screens, the costs for small businesses will be significantly less since the rule will only apply to small business digital theaters.).

Table 44: Movie Theater Firms, Establishments and Receipts by Revenue Category, as Percent of Totals

	Number of firms	Number of establishments	Receipts (\$1,000)	Number of firms as % of TOTAL*	Cumulative total**	Number of establishments % of TOTAL***	Cumulative total****
Total Firms	2,004	4,801	12,391,925	100%	--	100%	--
Firms with sales/receipts/revenue less than \$100,000	333	333	17,404	16.60%	--	6.90%	--
Firms with sales/receipts/revenue of \$100,000 to \$499,999	703	712	177,762	35.10%	51.70%	14.80%	21.80%
Firms with sales/receipts/revenue of \$500,000 to \$999,999	318	339	226,243	15.90%	67.60%	7.10%	28.80%
Firms with sales/receipts/revenue of \$1,000,000 to \$2,499,999	386	472	610,584	19.30%	86.80%	9.80%	38.70%
Firms with sales/receipts/revenue of \$2,500,000 to \$4,999,999	109	197	359,542	5.40%	92.30%	4.10%	42.80%
Firms with sales/receipts/revenue of \$5,000,000 to \$7,499,999	40	99	235,543	2.00%	94.30%	2.10%	44.80%
Firms with sales/receipts/revenue of \$7,500,000 to \$9,999,999	24	60	190,897	1.20%	95.50%	1.20%	46.10%
Firms with sales/receipts/revenue of \$10,000,000 to \$14,999,999	23	106	228,332	1.10%	96.60%	2.20%	48.30%
Firms with sales/receipts/revenue of \$15,000,000 to \$19,999,999	13	105	182,585	0.60%	97.30%	2.20%	50.50%
Firms with sales/receipts/revenue of \$20,000,000 to \$24,999,999	6	50	97,729	0.30%	97.60%	1.00%	51.50%
Firms with sales/receipts/revenue of \$25,000,000 to \$29,999,999	8	79	171,327	0.40%	98.00%	1.60%	53.20%
Firms with sales/receipts/revenue of \$30,000,000 to \$34,999,999	2	14	n/a	0.10%	98.10%	0.30%	53.40%

	Number of firms	Number of establishments	Receipts (\$1,000)	Number of firms as % of TOTAL*	Cumulative total**	Number of establishments % of TOTAL***	Cumulative total****
Firms with sales/receipts/revenue of \$35,000,000+*	39	2,235	n/a	1.90%	100.00%	46.60%	100.00%

*Calculated by dividing the value in “Number of firms” for that size category by the total Number of firms (which is 2,004).

** Calculated by adding percentage in the column to the right to the cumulative values preceding.

*** Calculated by dividing the value in “Number of establishments” for that size category by the total Number of establishments (which is 4,801).

**** Calculated by adding percentage in the column to the right to the cumulative values preceding.

Source: Number of firms, Number of establishments, and Receipts (\$1,000) from Small Business Administration, Statistics of U.S. Businesses, Business Dynamics Statistics, Business Employment Dynamics, and Nonemployer Statistics. <http://www.sba.gov/advocacy/849/12162> (last visited July 10, 2014). Downloaded from SBA Web site December 2013.

9. Appendix

APPENDIX

OPTION 1: ANNUAL COSTS FOR ALL THEATERS, FOR EACH BASELINE

One-Screen Per Theater Baseline																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$131.2	\$60.7	\$1.2	\$1.2	\$1.1	\$4.7	\$9.1	\$8.6	\$4.3	\$1.7	\$5.3	\$14.9	\$7.8	\$4.7	\$3.2	\$2.7
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$27.1	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1	\$2.0	\$1.9	\$1.8	\$1.7	\$1.6	\$1.5	\$1.4	\$1.4	\$1.3	\$1.2
Digital Total	\$186.2	\$77.9	\$3.9	\$3.7	\$3.5	\$7.4	\$12.1	\$11.5	\$6.6	\$3.7	\$8.2	\$20.9	\$10.8	\$6.8	\$5.0	\$4.4
Total Compliance Costs (Digital and Analog)	\$225.9	\$77.9	\$3.9	\$3.7	\$30.6	\$8.1	\$12.8	\$12.1	\$7.2	\$4.4	\$8.9	\$21.4	\$11.2	\$7.1	\$6.6	\$9.9

Litigation-Based Baseline																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$97.2	\$41.6	\$1.2	\$1.2	\$1.1	\$3.9	\$7.4	\$7.0	\$3.6	\$1.6	\$3.9	\$9.5	\$5.9	\$4.0	\$2.8	\$2.4
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$27.1	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1	\$2.0	\$1.9	\$1.8	\$1.7	\$1.6	\$1.5	\$1.4	\$1.4	\$1.3	\$1.2
Digital Total	\$152.2	\$58.8	\$3.9	\$3.7	\$3.5	\$6.6	\$10.4	\$9.9	\$5.9	\$3.6	\$6.8	\$15.6	\$8.9	\$6.0	\$4.6	\$4.1
Total Compliance Costs (Digital and Analog)	\$191.9	\$58.8	\$3.9	\$3.7	\$30.6	\$7.3	\$11.1	\$10.5	\$6.6	\$4.3	\$7.5	\$16.0	\$9.3	\$6.4	\$6.2	\$9.7

APPENDIX

OPTION 1: ANNUAL COSTS FOR ALL THEATERS, FOR EACH BASELINE (CONTINUED)

NATO-Based Baseline																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$83.1	\$34.0	\$1.2	\$1.2	\$1.1	\$3.5	\$6.4	\$6.2	\$3.3	\$1.6	\$3.4	\$7.7	\$5.1	\$3.6	\$2.6	\$2.3
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$27.1	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1	\$2.0	\$1.9	\$1.8	\$1.7	\$1.6	\$1.5	\$1.4	\$1.4	\$1.3	\$1.2
Digital Total	\$138.1	\$51.2	\$3.9	\$3.7	\$3.5	\$6.2	\$9.5	\$9.0	\$5.6	\$3.5	\$6.3	\$13.8	\$8.1	\$5.6	\$4.4	\$4.0
Total Compliance Costs (Digital and Analog)	\$177.8	\$51.2	\$3.9	\$3.7	\$30.6	\$6.9	\$10.1	\$9.6	\$6.2	\$4.3	\$6.9	\$14.2	\$8.5	\$6.0	\$6.0	\$9.5

OPTION 1: ANNUAL COSTS FOR ANALOG THEATERS ONLY

Analog Total Costs																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discounted Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Analog Captioning	\$31.1	\$0.0	\$0.0	\$0.0	\$24.4	\$0.0	\$0.0	\$0.0	\$0.1	\$0.2	\$0.2	\$0.1	\$0.0	\$0.0	\$1.2	\$4.9
Analog Assisted Listening	\$2.7	\$0.0	\$0.0	\$0.0	\$2.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.1	\$0.4
Analog O&M	\$5.8	\$0.0	\$0.0	\$0.0	\$0.8	\$0.7	\$0.7	\$0.6	\$0.5	\$0.5	\$0.4	\$0.4	\$0.3	\$0.3	\$0.3	\$0.2
Analog Total Costs	\$39.7	\$0.0	\$0.0	\$0.0	\$27.1	\$0.7	\$0.7	\$0.6	\$0.7	\$0.8	\$0.7	\$0.5	\$0.4	\$0.4	\$1.6	\$5.6

APPENDIX

OPTION 2: ANNUAL COSTS FOR ALL DIGITAL THEATERS FOR EACH BASELINE

One-Screen Per Theater Baseline (No Analog)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$131.2	\$60.7	\$1.2	\$1.2	\$1.1	\$4.7	\$9.1	\$8.6	\$4.3	\$1.7	\$5.3	\$14.9	\$7.8	\$4.7	\$3.2	\$2.7
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$27.1	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1	\$2.0	\$1.9	\$1.8	\$1.7	\$1.6	\$1.5	\$1.4	\$1.4	\$1.3	\$1.2
Total Compliance Costs	\$186.2	\$77.9	\$3.9	\$3.7	\$3.5	\$7.4	\$12.1	\$11.5	\$6.6	\$3.7	\$8.2	\$20.9	\$10.8	\$6.8	\$5.0	\$4.4

Litigation-Based Baseline (No Analog)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$97.2	\$41.6	\$1.2	\$1.2	\$1.1	\$3.9	\$7.4	\$7.0	\$3.6	\$1.6	\$3.9	\$9.5	\$5.9	\$4.0	\$2.8	\$2.4
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$27.1	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1	\$2.0	\$1.9	\$1.8	\$1.7	\$1.6	\$1.5	\$1.4	\$1.4	\$1.3	\$1.2
Total Compliance Costs	\$152.2	\$58.8	\$3.9	\$3.7	\$3.5	\$6.6	\$10.4	\$9.9	\$5.9	\$3.6	\$6.8	\$15.6	\$8.9	\$6.0	\$4.6	\$4.1

APPENDIX

OPTION 2: ANNUAL COSTS FOR ALL DIGITAL THEATERS, FOR EACH BASELINE (CONTINUED)

NATO-Based Baseline (No Analog)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$83.1	\$34.0	\$1.2	\$1.2	\$1.1	\$3.5	\$6.4	\$6.2	\$3.3	\$1.6	\$3.4	\$7.7	\$5.1	\$3.6	\$2.6	\$2.3
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$27.1	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1	\$2.0	\$1.9	\$1.8	\$1.7	\$1.6	\$1.5	\$1.4	\$1.4	\$1.3	\$1.2
Total Compliance Costs	\$138.1	\$51.2	\$3.9	\$3.7	\$3.5	\$6.2	\$9.5	\$9.0	\$5.6	\$3.5	\$6.3	\$13.8	\$8.1	\$5.6	\$4.4	\$4.0

APPENDIX

ALTERNATIVE 1: 50% COMPLIANCE

ANNUAL COSTS FOR ALL THEATERS (50% COMPLIANCE), FOR EACH BASELINE

One-Screen Per Theater Baseline (50% Compliance)																	
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
Digital Captioning	\$57.8	\$26.3	\$0.6	\$0.6	\$0.5	\$2.0	\$3.9	\$3.7	\$1.9	\$0.8	\$2.4	\$6.7	\$3.5	\$2.1	\$1.5	\$1.3	
Digital Audio Description	\$14.1	\$7.4	\$0.1	\$0.1	\$0.1	\$0.3	\$0.5	\$0.5	\$0.3	\$0.1	\$0.7	\$2.3	\$0.8	\$0.3	\$0.2	\$0.2	
Digital O&M	\$20.5	\$1.9	\$1.8	\$1.7	\$1.6	\$1.6	\$1.5	\$1.4	\$1.3	\$1.3	\$1.2	\$1.1	\$1.1	\$1.0	\$1.0	\$0.9	
Digital Total	\$92.4	\$35.7	\$2.5	\$2.4	\$2.3	\$3.9	\$5.9	\$5.6	\$3.5	\$2.2	\$4.3	\$10.1	\$5.3	\$3.5	\$2.7	\$2.4	
Total Compliance Costs (Digital and Analog)	\$117.5	\$35.7	\$2.6	\$2.4	\$18.2	\$4.6	\$6.5	\$6.2	\$4.1	\$2.9	\$4.8	\$10.5	\$5.7	\$3.8	\$3.7	\$5.7	

Litigation-Based Baseline (50% Compliance)																	
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	
Digital Captioning	\$49.3	\$21.2	\$0.6	\$0.6	\$0.5	\$2.0	\$3.7	\$3.6	\$1.8	\$0.8	\$2.0	\$4.8	\$3.0	\$2.0	\$1.4	\$1.2	
Digital Audio Description	\$14.1	\$7.4	\$0.1	\$0.1	\$0.1	\$0.3	\$0.5	\$0.5	\$0.3	\$0.1	\$0.7	\$2.3	\$0.8	\$0.3	\$0.2	\$0.2	
Digital O&M	\$20.5	\$1.9	\$1.8	\$1.7	\$1.6	\$1.6	\$1.5	\$1.4	\$1.3	\$1.3	\$1.2	\$1.1	\$1.1	\$1.0	\$1.0	\$0.9	
Digital Total	\$83.8	\$30.5	\$2.5	\$2.4	\$2.3	\$3.9	\$5.8	\$5.5	\$3.4	\$2.2	\$3.8	\$8.2	\$4.9	\$3.4	\$2.6	\$2.4	
Total Compliance Costs (Digital and Analog)	\$108.9	\$30.5	\$2.6	\$2.4	\$18.2	\$4.6	\$6.4	\$6.1	\$4.0	\$2.9	\$4.4	\$8.7	\$5.2	\$3.7	\$3.7	\$5.6	

APPENDIX

ANNUAL COSTS FOR ALL THEATERS (50% COMPLIANCE), FOR EACH BASELINE (CONTINUED)

NATO-Based Baseline (50% Compliance)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$42.2	\$17.4	\$0.6	\$0.6	\$0.5	\$1.8	\$3.3	\$3.1	\$1.7	\$0.8	\$1.7	\$3.9	\$2.6	\$1.8	\$1.3	\$1.2
Digital Audio Description	\$14.1	\$7.4	\$0.1	\$0.1	\$0.1	\$0.3	\$0.5	\$0.5	\$0.3	\$0.1	\$0.7	\$2.3	\$0.8	\$0.3	\$0.2	\$0.2
Digital O&M	\$20.5	\$1.9	\$1.8	\$1.7	\$1.6	\$1.6	\$1.5	\$1.4	\$1.3	\$1.3	\$1.2	\$1.1	\$1.1	\$1.0	\$1.0	\$0.9
Digital Total	\$76.8	\$26.7	\$2.5	\$2.4	\$2.3	\$3.6	\$5.3	\$5.0	\$3.3	\$2.2	\$3.6	\$7.3	\$4.5	\$3.2	\$2.5	\$2.3
Total Compliance Costs (Digital and Analog)	\$101.9	\$26.8	\$2.6	\$2.4	\$18.2	\$4.4	\$5.9	\$5.6	\$3.9	\$2.8	\$4.1	\$7.8	\$4.8	\$3.5	\$3.6	\$5.6

ANNUAL COSTS FOR ANALOG THEATERS ONLY (50% COMPLIANCE)

Analog Total Costs (50% Compliance)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discounted Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Analog Captioning	\$17.8	\$0.0	\$0.0	\$0.0	\$13.9	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.7	\$2.8
Analog Assisted Listening	\$1.6	\$0.0	\$0.0	\$0.0	\$1.2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.2
Analog O&M	\$5.7	\$0.0	\$0.0	\$0.0	\$0.8	\$0.7	\$0.6	\$0.6	\$0.5	\$0.5	\$0.4	\$0.4	\$0.3	\$0.3	\$0.3	\$0.2
Analog Total Costs	\$25.1	\$0.0	\$0.0	\$0.0	\$15.9	\$0.7	\$0.6	\$0.6	\$0.6	\$0.6	\$0.6	\$0.4	\$0.3	\$0.3	\$1.0	\$3.3

APPENDIX

ALTERNATIVE 2: 2-YEAR DELAY FOR ANALOG THEATERS

ANNUAL COSTS FOR ALL THEATERS (2 YEAR ANALOG DELAY), FOR EACH BASELINE

One-Screen Per Theater Baseline (2 Year Analog Delay)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$131.2	\$60.7	\$1.2	\$1.2	\$1.1	\$4.7	\$9.1	\$8.6	\$4.3	\$1.7	\$5.3	\$14.9	\$7.8	\$4.7	\$3.2	\$2.7
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$27.1	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1	\$2.0	\$1.9	\$1.8	\$1.7	\$1.6	\$1.5	\$1.4	\$1.4	\$1.3	\$1.2
Digital Total	\$186.2	\$77.9	\$3.9	\$3.7	\$3.5	\$7.4	\$12.1	\$11.5	\$6.6	\$3.7	\$8.2	\$20.9	\$10.8	\$6.8	\$5.0	\$4.4
Total Compliance Costs (Digital and Analog)	\$237.5	\$77.9	\$37.7	\$4.6	\$4.3	\$8.1	\$12.9	\$12.5	\$7.4	\$4.3	\$8.7	\$21.4	\$12.8	\$13.7	\$6.6	\$4.7

Litigation-Based Baseline (2 Year Analog Delay)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$97.2	\$41.6	\$1.2	\$1.2	\$1.1	\$3.9	\$7.4	\$7.0	\$3.6	\$1.6	\$3.9	\$9.5	\$5.9	\$4.0	\$2.8	\$2.4
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$27.1	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1	\$2.0	\$1.9	\$1.8	\$1.7	\$1.6	\$1.5	\$1.4	\$1.4	\$1.3	\$1.2
Digital Total	\$152.2	\$58.8	\$3.9	\$3.7	\$3.5	\$6.6	\$10.4	\$9.9	\$5.9	\$3.6	\$6.8	\$15.6	\$8.9	\$6.0	\$4.6	\$4.1
Total Compliance Costs (Digital and Analog)	\$203.5	\$58.8	\$37.7	\$4.6	\$4.3	\$7.3	\$11.2	\$10.9	\$6.8	\$4.2	\$7.2	\$16.0	\$10.9	\$12.9	\$6.2	\$4.4

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ANNUAL COSTS FOR ALL THEATERS (2 YEAR ANALOG DELAY), FOR EACH BASELINE (CONTINUED)

NATO-Based Baseline (2 Year Analog Delay)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$83.1	\$34.0	\$1.2	\$1.2	\$1.1	\$3.5	\$6.4	\$6.2	\$3.3	\$1.6	\$3.4	\$7.7	\$5.1	\$3.6	\$2.6	\$2.3
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$27.1	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1	\$2.0	\$1.9	\$1.8	\$1.7	\$1.6	\$1.5	\$1.4	\$1.4	\$1.3	\$1.2
Digital Total	\$138.1	\$51.2	\$3.9	\$3.7	\$3.5	\$6.2	\$9.5	\$9.0	\$5.6	\$3.5	\$6.3	\$13.8	\$8.1	\$5.6	\$4.4	\$4.0
Total Compliance Costs (Digital and Analog)	\$189.4	\$51.2	\$37.7	\$4.6	\$4.3	\$6.9	\$10.3	\$10.0	\$6.4	\$4.1	\$6.7	\$14.2	\$10.1	\$12.6	\$6.0	\$4.2

ANNUAL COSTS FOR ANALOG THEATERS ONLY (2 YEAR ANALOG DELAY)

Analog Total Costs (2 Year Analog Delay)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discounted Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Analog Captioning	\$40.1	\$0.0	\$30.4	\$0.0	\$0.0	\$0.0	\$0.1	\$0.2	\$0.2	\$0.1	\$0.0	\$0.0	\$1.5	\$6.2	\$1.2	\$0.0
Analog Assisted Listening	\$3.5	\$0.0	\$2.5	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.1	\$0.4	\$0.1	\$0.0
Analog O&M	\$7.7	\$0.0	\$1.0	\$0.9	\$0.8	\$0.7	\$0.7	\$0.6	\$0.5	\$0.5	\$0.4	\$0.4	\$0.3	\$0.3	\$0.3	\$0.2
Analog Total Costs	\$51.3	\$0.0	\$33.9	\$0.9	\$0.8	\$0.7	\$0.8	\$0.9	\$0.8	\$0.6	\$0.4	\$0.4	\$2.0	\$6.9	\$1.6	\$0.3

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SENSITIVITY ANALYSIS: 5% O&M COST

ANNUAL COSTS FOR ALL THEATERS (5% O&M COST), FOR EACH BASELINE

One-Screen Per Theater Baseline (5% O&M Cost)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$131.2	\$60.7	\$1.2	\$1.2	\$1.1	\$4.7	\$9.1	\$8.6	\$4.3	\$1.7	\$5.3	\$14.9	\$7.8	\$4.7	\$3.2	\$2.7
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$45.2	\$4.2	\$4.0	\$3.8	\$3.6	\$3.4	\$3.3	\$3.1	\$2.9	\$2.8	\$2.7	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1
Digital Total (Option 2 Total Costs)	\$204.3	\$79.6	\$5.5	\$5.2	\$4.9	\$8.7	\$13.4	\$12.8	\$7.8	\$4.8	\$9.3	\$21.9	\$11.8	\$7.7	\$5.8	\$5.2
Total Compliance Costs (Option 1 Total Costs)	\$247.8	\$79.6	\$5.5	\$5.2	\$32.6	\$10.0	\$14.5	\$13.7	\$8.8	\$5.9	\$10.3	\$22.6	\$12.3	\$8.2	\$7.6	\$10.9

Litigation-Based Baseline (5% O&M Cost)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$97.2	\$41.6	\$1.2	\$1.2	\$1.1	\$3.9	\$7.4	\$7.0	\$3.6	\$1.6	\$3.9	\$9.5	\$5.9	\$4.0	\$2.8	\$2.4
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$45.2	\$4.2	\$4.0	\$3.8	\$3.6	\$3.4	\$3.3	\$3.1	\$2.9	\$2.8	\$2.7	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1
Digital Total (Option 2 Total Costs)	\$170.3	\$60.5	\$5.5	\$5.2	\$4.9	\$8.0	\$11.7	\$11.2	\$7.1	\$4.7	\$7.9	\$16.6	\$9.9	\$6.9	\$5.4	\$4.9
Total Compliance Costs (Option 1 Total Costs)	\$213.8	\$60.5	\$5.5	\$5.2	\$32.6	\$9.2	\$12.8	\$12.1	\$8.1	\$5.8	\$8.8	\$17.3	\$10.5	\$7.5	\$7.2	\$10.6

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ANNUAL COSTS FOR ALL THEATERS (5% O&M COST), FOR EACH BASELINE (CONTINUED)

NATO-Based Baseline (5% O&M Cost)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$83.1	\$34.0	\$1.2	\$1.2	\$1.1	\$3.5	\$6.4	\$6.2	\$3.3	\$1.6	\$3.4	\$7.7	\$5.1	\$3.6	\$2.6	\$2.3
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$45.2	\$4.2	\$4.0	\$3.8	\$3.6	\$3.4	\$3.3	\$3.1	\$2.9	\$2.8	\$2.7	\$2.5	\$2.4	\$2.3	\$2.2	\$2.1
Digital Total (Option 2 Total Costs)	\$156.2	\$52.9	\$5.5	\$5.2	\$4.9	\$7.5	\$10.8	\$10.3	\$6.8	\$4.6	\$7.3	\$14.8	\$9.1	\$6.6	\$5.2	\$4.8
Total Compliance Costs (Option 1 Total Costs)	\$199.7	\$52.9	\$5.5	\$5.2	\$32.6	\$8.8	\$11.9	\$11.3	\$7.8	\$5.7	\$8.3	\$15.5	\$9.7	\$7.1	\$7.0	\$10.5

ANNUAL COSTS FOR ANALOG THEATERS ONLY (5% O&M COST)

Analog Total Costs (5% O&M Cost)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discounted Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Analog Captioning	\$31.1	\$0.0	\$0.0	\$0.0	\$24.4	\$0.0	\$0.0	\$0.0	\$0.1	\$0.2	\$0.2	\$0.1	\$0.0	\$0.0	\$1.2	\$4.9
Analog Assisted Listening	\$2.7	\$0.0	\$0.0	\$0.0	\$2.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.1	\$0.4
Analog O&M	\$9.7	\$0.0	\$0.0	\$0.0	\$1.3	\$1.2	\$1.1	\$1.0	\$0.9	\$0.8	\$0.7	\$0.6	\$0.6	\$0.5	\$0.5	\$0.4
Analog Total Costs	\$43.5	\$0.0	\$0.0	\$0.0	\$27.7	\$1.2	\$1.1	\$1.0	\$1.0	\$1.1	\$1.0	\$0.7	\$0.6	\$0.6	\$1.8	\$5.7

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SENSITIVITY ANALYSIS: 8% O&M COST

ANNUAL COSTS FOR ALL THEATERS (8% O&M COST), FOR EACH BASELINE

One-Screen Per Theater Baseline (8% O&M Cost)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$131.2	\$60.7	\$1.2	\$1.2	\$1.1	\$4.7	\$9.1	\$8.6	\$4.3	\$1.7	\$5.3	\$14.9	\$7.8	\$4.7	\$3.2	\$2.7
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$72.4	\$6.7	\$6.4	\$6.1	\$5.8	\$5.5	\$5.2	\$4.9	\$4.7	\$4.5	\$4.3	\$4.0	\$3.8	\$3.7	\$3.5	\$3.3
Digital Total (Option 2 Total Costs)	\$231.5	\$82.1	\$7.9	\$7.5	\$7.1	\$10.8	\$15.3	\$14.6	\$9.5	\$6.5	\$10.9	\$23.4	\$13.2	\$9.1	\$7.1	\$6.5
Total Compliance Costs (Option 1 Total Costs)	\$280.8	\$82.2	\$7.9	\$7.5	\$35.6	\$12.8	\$17.1	\$16.2	\$11.1	\$8.0	\$12.3	\$24.5	\$14.1	\$9.9	\$9.2	\$12.4

Litigation-Based Baseline (8% O&M Cost)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$97.2	\$41.6	\$1.2	\$1.2	\$1.1	\$3.9	\$7.4	\$7.0	\$3.6	\$1.6	\$3.9	\$9.5	\$5.9	\$4.0	\$2.8	\$2.4
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$72.4	\$6.7	\$6.4	\$6.1	\$5.8	\$5.5	\$5.2	\$4.9	\$4.7	\$4.5	\$4.3	\$4.0	\$3.8	\$3.7	\$3.5	\$3.3
Digital Total (Option 2 Total Costs)	\$197.5	\$63.0	\$7.9	\$7.5	\$7.1	\$10.0	\$13.6	\$13.0	\$8.9	\$6.4	\$9.5	\$18.1	\$11.3	\$8.3	\$6.8	\$6.2
Total Compliance Costs (Option 1 Total Costs)	\$246.8	\$63.1	\$7.9	\$7.5	\$35.6	\$12.0	\$15.4	\$14.6	\$10.4	\$7.9	\$10.8	\$19.2	\$12.2	\$9.2	\$8.8	\$12.1

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ANNUAL COSTS FOR ALL THEATERS (8% O&M COST), FOR EACH BASELINE (CONTINUED)

NATO-Based Baseline (8% O&M Cost)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discount Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Digital Captioning	\$83.1	\$34.0	\$1.2	\$1.2	\$1.1	\$3.5	\$6.4	\$6.2	\$3.3	\$1.6	\$3.4	\$7.7	\$5.1	\$3.6	\$2.6	\$2.3
Digital Audio Description	\$27.9	\$14.7	\$0.3	\$0.3	\$0.2	\$0.6	\$1.1	\$1.0	\$0.6	\$0.3	\$1.3	\$4.5	\$1.5	\$0.7	\$0.5	\$0.4
Digital O&M	\$72.4	\$6.7	\$6.4	\$6.1	\$5.8	\$5.5	\$5.2	\$4.9	\$4.7	\$4.5	\$4.3	\$4.0	\$3.8	\$3.7	\$3.5	\$3.3
Digital Total (Option 2 Total Costs)	\$183.4	\$55.4	\$7.9	\$7.5	\$7.1	\$9.6	\$12.7	\$12.1	\$8.5	\$6.3	\$8.9	\$16.3	\$10.5	\$7.9	\$6.5	\$6.0
Total Compliance Costs (Option 1 Total Costs)	\$232.7	\$55.5	\$7.9	\$7.5	\$35.6	\$11.6	\$14.5	\$13.7	\$10.1	\$7.9	\$10.3	\$17.4	\$11.4	\$8.8	\$8.6	\$12.0

ANNUAL COSTS FOR ANALOG THEATERS ONLY (8% O&M COST)

Analog Total Costs (8% O&M Cost)																
2015 \$ Millions	TOTAL COST	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Costs (7% Discounted Rate)		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Analog Captioning	\$31.1	\$0.0	\$0.0	\$0.0	\$24.4	\$0.0	\$0.0	\$0.0	\$0.1	\$0.2	\$0.2	\$0.1	\$0.0	\$0.0	\$1.2	\$4.9
Analog Assisted Listening	\$2.7	\$0.0	\$0.0	\$0.0	\$2.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.1	\$0.1	\$0.0	\$0.0	\$0.0	\$0.1	\$0.4
Analog O&M	\$15.5	\$0.1	\$0.1	\$0.0	\$2.1	\$2.0	\$1.8	\$1.6	\$1.4	\$1.3	\$1.1	\$1.0	\$0.9	\$0.8	\$0.7	\$0.7
Analog Total Costs	\$49.3	\$0.1	\$0.1	\$0.0	\$28.5	\$2.0	\$1.8	\$1.6	\$1.5	\$1.5	\$1.4	\$1.1	\$0.9	\$0.9	\$2.1	\$5.9

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DEVICE REPLACEMENT ANNUAL COSTS BY THEATER TYPE

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
Total		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Megaplex Theaters																
Digital	\$23,345	\$0	\$0	\$0	\$2,106	\$4,592	\$4,292	\$1,719	\$241	\$1,051	\$2,128	\$2,535	\$1,887	\$982	\$723	\$1,089
Multiplex Theaters																
Digital	\$18,722	\$0	\$0	\$0	\$1,689	\$3,683	\$3,442	\$1,379	\$193	\$843	\$1,707	\$2,033	\$1,513	\$788	\$580	\$873
Miniplex Theaters																
Digital	\$7,930	\$0	\$0	\$0	\$715	\$1,560	\$1,458	\$584	\$82	\$357	\$723	\$861	\$641	\$334	\$245	\$370
Analog*	\$1,526	\$0	\$0	\$0	\$0	\$0	\$0	\$156	\$341	\$319	\$128	\$18	\$78	\$158	\$188	\$140
Single Screen Theaters																
Digital	\$2,731	\$0	\$0	\$0	\$246	\$537	\$502	\$201	\$28	\$123	\$249	\$297	\$221	\$115	\$85	\$127
Analog*	\$577	\$0	\$0	\$0	\$0	\$0	\$0	\$59	\$129	\$121	\$48	\$7	\$30	\$60	\$71	\$53

*Analog Theaters are not required to have closed captioning and video description until the fourth year after the rule.

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COST ESTIMATES FOR SONY GLASSES

Sony's Entertainment Access Glasses and Audio Description receivers are a recent entrant into the market; first available in 2012. Sony's Glasses have multiple capabilities; including providing closed captioning to the wearer. Because Sony's Glasses are a new and expensive product in a market when other less expensive and more established options are available (including similar glasses from USL), they have not been included in the main estimation. Instead, preliminary cost estimates for Sony glasses for their captioning capabilities are presented in this appendix

While the Sony hardware is only \$500, the glasses are retailing (in mid-2013) for \$1,250 each (Table 45).

Table 45: Unit Costs for Sony Access Glasses System

Digital <u>Captioning</u> Hardware Cost (one per screen)	Digital <u>Captioning</u> Device Costs (multiple per screen/theater)
\$500	\$1,250

Source: Telephone interview with manufacturer, July 2013.

Sony's Access Glasses device costs for the individual glasses make the overall per theater average capital costs for the first year notably higher than the average USL/CaptiView equipment capital costs (Table 46). This is particularly notable for Megaplexes, for which Sony's system would cost an average of \$51,500 (mid-2013 retail prices), approximately two thirds higher than the average of \$31,176 USL/CaptiView (average of the two systems) captioning equipment.

Table 46: Average Per-Theater First Year Capital Costs, USL/CapitView Average Costs and Sony Access Glasses

	Average Cost Per Theater Using Average of USL/CaptiView Equipment Costs	Average Cost Per Theater Using Sony Glasses Equipment Costs
Megaplex	\$31,176	\$51,500
Multiplex	\$22,335	\$40,500
Miniplex	\$8,948	\$17,000
Single Screen	\$2,692	\$5,500

If all theaters that still needed to purchase captioning systems as estimated under baseline scenarios number 2 (Litigation-Based) and number 3 (NATO Survey Based) purchased Sony equipment, the total captioning equipment costs for all theaters during the entire 15 years following the publication of the proposed rule would likely total between \$250.9 and \$277.2 million when using a 7 percent discount rate, and between \$310.4 and \$341.7 million when using

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a 3 percent discount rate, as seen in Table 47. The largest single year costs, which would occur in the first year, would likely reach between \$70.9 million and \$83.5 million, depending on the baseline conditions.

Table 47: Total Captioning Costs over 15 Years, USL/CaptiView versus Sony Access Glasses, Discounted at 7 Percent and 3 Percent (2015 Dollars)

	Under Baseline 2–Litigation- Based (millions \$) <i>Discounted at 7%</i>	Under Baseline 2–Litigation- Based (millions \$) <i>Discounted at 3%</i>	Under Baseline 3–NATO Survey Based (millions \$) <i>Discounted at 7%</i>	Under Baseline 3–NATO Survey Based (millions \$) <i>Discounted at 3%</i>
Average USL/CaptiView	\$156.2	\$192.5	\$142.1	\$175.9
<i>Largest Single Year Costs (Year 1; USL/CaptiView avg.)</i>	\$43.7		\$36.1	
Sony Access Glasses	\$277.2	\$341.7	\$250.9	\$310.4
<i>Largest Single Year Costs (Year 1; Sony)</i>	\$83.5		\$70.9	

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DETAILS REGARDING INTERIM CALCULATIONS FOR IMPACTS ON SMALL MOVIES THEATERS

To calculate average costs per firm, an average number of establishments per firm was calculated using SBA and Census data on Movie Theaters by revenue size. The table below presents SBA/Census data for number of firms and number of establishments, by revenue category, plus the calculated values for the average number of establishments per firm for that revenue category, as well as the percentage of all establishments in the consolidated group and the average number of establishments per firm for that consolidated group.

Table 48: Estimation of Average Establishments per Firm

	Number of firms	Number of establishments	Receipts (\$1,000)	Establishments Per Firm	% of establishments in category	(Group %) of establishments in category	Establishments Per Firm
Total Firms	2,004	4,801	12,391,925				
Firms with sales/receipts/revenue less than \$100,000	333	333	17,404	1.00	6.9%	21.8%	1.01
Firms with sales/receipts/revenue of \$100,000 to \$499,999	703	712	177,762	1.01	14.8%		
Firms with sales/receipts/revenue of \$500,000 to \$999,999	318	339	226,243	1.07	7.1%	21.0%	1.24
Firms with sales/receipts/revenue of \$1,000,000 to \$2,499,999	386	472	610,584	1.22	9.8%		
Firms with sales/receipts/revenue of \$2,500,000 to \$4,999,999	109	197	359,542	1.81	4.1%		
Firms with sales/receipts/revenue of \$5,000,000 to \$7,499,999	40	99	235,543	2.48	2.1%	10.4%	4.38
Firms with sales/receipts/revenue of	24	60	190,897	2.50	1.2%		

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	Number of firms	Number of establishments	Receipts (\$1,000)	Establishments Per Firm	% of establishments in category	(Group %) of establishments in category	Establishments Per Firm
\$7,500,000-\$9,999,999							
Firms with sales/receipts/revenue of \$10,000,000 to \$14,999,999	23	106	228,332	4.61	2.2%		
Firms with sales/receipts/revenue of \$15,000,000 to \$19,999,999	13	105	182,585	8.08	2.2%		
Firms with sales/receipts/revenue of \$20,000,000 to \$24,999,999	6	50	97,729	8.33	1.0%		
Firms with sales/receipts/revenue of \$25,000,000 to \$29,999,999	8	79	171,327	9.88	1.6%		
Firms with sales/receipts/revenue of \$30,000,000 to \$34,999,999	2	14	n/a	7.00	0.3%	46.8%	54.85
Firms with sales/receipts/revenue of \$35,000,000+*	39	2,235	n/a	57.31	46.6%		

Based on data from Small Business Administration, Statistics of U.S. Businesses, Business Dynamics Statistics, Business Employment Dynamics, and Nonemployer Statistics. <http://www.sba.gov/advocacy/849/12162>. (last visited July 10, 2014). Downloaded from SBA Web site December 2013.

Theater types (Single Screen, Miniplex, and Multiplex) needed to be distributed across revenue categories. In the absence of detailed data breaking down revenue groups by theater type, we distributed the theater types as presented below in Table 49. (Note that no small businesses were assumed to be Megaplexes.)

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Table 49: Distribution of Theater Size Types by Revenue Category

Size of firms (\$)	% of establishments in receipt category	Running total %	Running Total of Theater Type Based off 2015 Distribution			Breakdown of Theater Type		
			Single Screen	Miniplex	Multiplex	% Single Screen of Receipts Category	% Miniplex of Receipts Category	% Multiplex of Receipts Category
Less than \$100,000	6.9%	6.9%	6.9%	0.0%	0.0%	100.0%	0.0%	0.0%
\$100,000-499,000	14.8%	21.8%	12.6%	2.3%	0.0%	84.7%	15.3%	0.0%
\$500,000-999,000	7.1%	28.8%	0.0%	7.1%	0.0%	0.0%	100.0%	0.0%
\$1,000,000-2,499,000	9.8%	38.7%	0.0%	9.8%	0.0%	0.0%	100.0%	0.0%
\$2,500,000-4,999,000	4.1%	42.8%	0.0%	4.1%	0.0%	0.0%	100.0%	0.0%
\$5,000,000-7,499,000	2.1%	44.8%	0.0%	2.1%	0.0%	0.0%	100.0%	0.0%
\$7,500,000-9,999,000	1.2%	46.1%	0.0%	1.2%	0.0%	0.0%	100.0%	0.0%
\$10,000,000-14,999,000	2.2%	48.3%	0.0%	2.2%	0.0%	0.0%	100.0%	0.0%
\$15,000,000-19,999,000	2.2%	50.5%	0.0%	0.6%	1.6%	0.0%	27.1%	72.9%
\$20,000,000-24,999,000	1.0%	51.5%	0.0%	0.0%	1.0%	0.0%	0.0%	100.0%
\$25,000,000-29,999,000	1.6%	53.2%	0.0%	0.0%	1.6%	0.0%	0.0%	100.0%

Based on data from Small Business Administration, Statistics of U.S. Businesses, Business Dynamics Statistics, Business Employment Dynamics, and Nonemployer Statistics, available at <http://www.sba.gov/advocacy/849/12162>. (last visited July 10, 2014). Downloaded from SBA Web site December 2013.

Average capital costs per theater type were estimated by multiplying the number of screens by the required analog or digital equipment and the scoped number of devices. These average costs are presented in Table 50 and Table 51 below.

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Table 50: Average per Establishment Costs of Purchasing Digital Closed Captioning and Audio Description Equipment

Cost Per Digital Theater	Doremi	USL	Average Digital Cost
Megaplex*	\$40,540	\$36,554	\$38,547
Multiplex	\$27,880	\$25,798	\$26,839
Miniplex	\$10,920	\$10,252	\$10,586
Single Screen	\$3,285	\$3,111	\$3,198

* Note that the Regulatory Analysis assumes that no small business firm has Megaplexes; this data is presented for informational purposes only, to help illustrate the differences in average costs per digital theaters by type.

Table 51: Average per Establishment Costs of Purchasing Analog Closed Captioning and Audio Description Equipment

Cost Per Analog Theater	Rear Window
Megaplex	**
Multiplex	**
Miniplex	\$31,884
Single Screen	\$8,172

**Note that the RA assumes that all Megaplexes and Multiplexes have transitioned to digital projection systems by the time this rule goes into effect.

APPENDIX

The data on average receipts per firm (estimated from SBA and Census data) and the average cost per theater were used to calculate an average cost per firm (based on average number of theaters per firm). From these figures, a ratio of average cost/receipts was estimated separately for firms using analog or digital projection (Table 52).

Table 52: Estimated Average Receipts and Costs per Firm, Digital and Analog

Size of firms (\$)	Digital				Analog			
	Average receipts per firm*	Average cost per theater**	Average cost per firm***	Ratio of average cost/receipts****	Average receipts per firm*	Average cost per theater+	Average cost per firm++	Ratio of average cost/receipts+++
Less than \$100,000	\$52,264	\$3,198	\$3,198	6.1%	\$52,264	\$8,172	\$8,172	15.6%
\$100,000-499,000	\$252,862	\$4,326	\$4,381	1.7%	\$252,862	\$11,791	\$11,942	4.7%
\$500,000-999,000	\$711,456	\$10,586	\$11,285	1.6%	\$711,456	\$31,884	\$33,990	4.8%
\$1,000,000-2,499,000	\$1,581,824	\$10,586	\$12,945	0.8%	\$1,581,824	\$31,884	\$38,988	2.5%
\$2,500,000-4,999,000	\$3,298,550	\$10,586	\$19,132	0.6%	\$3,298,550	\$31,884	\$57,625	1.7%
\$5,000,000-7,499,000	\$5,888,575	\$10,586	\$26,200	0.4%	\$5,888,575	\$31,884	\$78,913	1.3%
\$7,500,000-9,999,000	\$7,954,042	\$10,586	\$26,465	0.3%	\$7,954,042	\$31,884	\$79,710	1.0%
\$10,000,000-14,999,000	\$9,927,478	\$10,586	\$48,788	0.5%	\$9,927,478	\$31,884	\$146,944	1.5%
\$15,000,000-19,999,000	\$14,045,000	\$22,436	\$181,213	1.3%	\$14,045,000	\$72,219	\$583,306	4.2%
\$20,000,000-24,999,000	\$16,288,167	\$26,839	\$223,658	1.4%	\$16,288,167	\$87,206	\$726,717	4.5%
\$25,000,000-29,999,000	\$21,415,875	\$26,839	\$265,035	1.2%	\$21,415,875	\$87,206	\$861,159	4.0%

*Calculated by dividing total receipts by number of firms (Table 49).

**From Table 50 above.

*** Calculated by multiplying Average cost per theater (this table) by Average number of establishments per revenue category (Table 49).

****Calculated by dividing Average costs per theater by Average receipts per firm (in this table).

+From Table 51 above.

++ Calculated by multiplying Average cost per theater (this table) by Average number of establishments per revenue (Table 49).

+++Calculated by dividing Average costs per theater by Average receipts per firm (in this table).

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Based on data from Small Business Administration, Statistics of U.S. Businesses, Business Dynamics Statistics, Business Employment Dynamics, and Nonemployer Statistics. <http://www.sba.gov/advocacy/849/12162>. (last visited July 10, 2014). Downloaded from SBA Web site December 2013.

DIFFERENCES BETWEEN DATA ON SMALL BUSINESS MOVIE THEATERS

Data on firms by revenue category for industries is collected via the U.S. Census Bureau’s Survey of Business Owners as part of the Economic Census, conducted every five years. The U.S. Small Business Administration’s Office of Advocacy partially funds the Census Bureau to produce data on employer firm size including the number of firms, number of establishments, employment, and annual payroll and annual sales/receipts/revenue by industry.⁴⁹ The latest industry data for movie theaters is from the 2007 Economic Census.

Data for Motion Picture Theaters (except Drive-Ins) is available on two Federal Web sites: (1) the Small Business Administration’s Web site, and (2) the Census Bureau’s American FactFinder Web site.⁵⁰ Although the datasets on both Web sites are from the 2007 Economic Census, the two datasets contain different estimates of the total number of Motion Picture Theaters. The two datasets have different total numbers of firms and different categories for which data is presented. The SBA dataset includes a greater number of revenue categories, but the dataset from the Census Web site separates firms that only operated part of the year from those that operated all year.

The following tables summarize some of the differences between the two datasets. The dataset downloaded from the SBA Website has a notably larger number of firms with revenues of less than \$0.5 million.

Table 53: Dataset Differences in Number of Establishments

Receipt Size Class	Number of Establishments		
	SBA	US Census FactFinder	Difference
<\$499,999	1,045	820	27.4%
\$500,000-\$4,999,999	1,008	962	4.8%
\$5,000,000-\$34,999,999	513	561*	-8.6%

*This number was calculated by taking half (50%) of the total number of establishments in the \$25,000 to \$49,999,999 category due to the lack of similar receipt size category with the SBA data.

⁴⁹ See Office of Advocacy, available at <http://www.sba.gov/advocacy/849/12162> (last visited July 10, 2014).

⁵⁰ See SBA’s data on its page for “Firm Size Data,” available at <http://www.sba.gov/advocacy/849/12162> (last visited, July 10, 2014). Detailed data by revenue group is on the excel file under the U.S. Static data section, labeled: “• U.S. data including multiple tables (Microsoft Excel file),” and on the tab labeled “us_rec_detail_ind07”. Data directly from Census can be downloaded from Census’ American FactFinder website, available at <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>, by selecting “Advanced Search”, then “Show Me All”, and under Section 1, entering the topic EC0751SSZ4. (last visited June 11, 2014). Data was accessed December 2013.

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Meanwhile, the dataset downloaded from the SBA Website has lower average receipts per firm.

Table 54: Dataset Differences in Average Receipts per Firm

Receipt Size Class	Average Firm Receipts		
	SBA	US Census FactFinder	Difference
<\$499,999	\$188,384	\$201,973	-6.7%
\$500,000-\$4,999,999	\$1,471,549	\$1,484,995	-0.9%
\$5,000,000-\$34,999,999	\$9,705,377*	\$12,437,259	-22.0%

*This number does not include the \$30,000,000-\$34,999,000 category of firms because the SBA data does not report the receipts due to confidentiality reasons.

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SOURCE NOTES

The table below summarized key inputs in the cost estimation and the source for those estimates. The table below is not comprehensive with respect to all values used to estimate costs; some inputs require discussion and are described in the appropriate section of the Initial RA.

Measure/Input	Source
Number of Theaters (2009)	2009 Theatrical Market Statistics Report, Motion Picture Association of America
Percentage of Theaters that are Digital (2013)	Testimony of John Fithian, President &CEO of National Association of Theatre Owners, Inc. before the U.S, Senate Committee on Health, Education, Labor and Pensions. May 14, 2013
Annual Growth of Theaters (2008-2012)	2012 Theatrical Market Statistics Report, Motion Picture Association of America
Captioning Devices Per Theater	DOJ Subject Matter Expert
Audio Devices Per Theater	DOJ Subject Matter Expert
Captioning Hardware Replacement Schedule	DOJ Subject Matter Expert, based on discussions with manufacturers
Audio Hardware Replacement Schedule	DOJ Subject Matter Expert, based on discussions with manufacturers
Captioning Device Replacement Schedule	DOJ Subject Matter Expert, based on discussions with manufacturers
Audio Device Replacement Schedule	DOJ Subject Matter Expert, based on discussions with manufacturers
Litigation Baseline Assumption	Estimated by Department staff based on 2010 NATO Circuits data and theater companies involved in recent litigation pertaining to captioning in movie theaters
NATO Baseline Assumption	Testimony of John Fithian, President &CEO of National Association of Theatre Owners, Inc. before the U.S, Senate Committee on Health, Education, Labor and Pensions. May 14, 2013
Analog Theaters Baseline Assumption	DOJ Subject Matter Expert
Partial Captioning Compliance Assumption	DOJ Subject Matter Expert
Digital Hardware Cost	From manufacturers of USL and CaptiView systems, obtained via interviews and web research in February 2013

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Measure/Input	Source
Digital Individual Captioning Device Cost	From manufacturers of USL and CaptiView systems, obtained via interviews and web research in February 2013
Analog Hardware Cost	Media Access Group at WGBH, Rear Window Captioning Components Cost Overview, August 2010
Analog Individual Captioning Device Cost	Media Access Group at WGBH, Rear Window Captioning Components Cost Overview, August 2010
Digital Audio Hardware Cost	From manufacturers of USL and CaptiView systems, obtained via interviews and web research, August 2013
Digital Audio Device Cost	From manufacturers of USL and CaptiView systems, obtained via interviews and web research, August 2013
Analog Audio Hardware Cost	From manufacturers of William Sound, obtained via web research, August 2013
Analog Audio Device Cost	From manufacturers of William Sound, obtained via web research, August 2013