

## **Request for Third Waiver of Tolling Standard to Extend Construction Permits**

WLS Television, Inc., Fox Television Stations, LLC, NBC Telemundo License LLC, and Unimas Chicago LLC (the “Chicago Broadcasters”) respectfully request a third waiver of the tolling standard set forth at Section 73.3598(b) of the rules of the Federal Communications Commission (“FCC” or “Commission”) as applied to the outstanding post-auction construction permits (“CPs”) for the following broadcast television stations that broadcast from Willis Tower in Chicago:

- WLS-TV, Channel 22, Facility ID No. 73226, and its channel sharing partner, WXFT, Facility ID No. 60539 (“WLS/WXFT”);
- WFLD, Channel 24, Facility ID No. 22211, and its channel sharing partner, WPWR-TV, Facility ID No. 48772 (“WFLD/WPWR-TV”); and
- WMAQ-TV, Channel 33, Facility ID No. 47905, and its channel sharing partner, WSNS-TV, Facility ID No. 70119 (“WMAQ-TV/WSNS-TV” and, collectively with WLS/WXFT and WFLD/WPWR-TV, the “Chicago Stations”).<sup>1</sup>

On April 8, 2020, the Chicago Broadcasters obtained a waiver of the FCC’s tolling standard to extend the post-auction CPs for the Chicago Stations based upon a demonstration that special, rare and exceptional circumstances precluded construction of the Chicago Stations’ post-auction facilities.<sup>2</sup> This waiver was extended for an additional six months, such that the Chicago Stations’ post-auction CPs are presently scheduled to expire on **April 12, 2021**.<sup>3</sup> Since grant of the tolling waivers for the Chicago Stations by the Media Bureau (“Bureau”), the Chicago Broadcasters have continued to work diligently with Willis Tower to implement their respective post-auction facilities, and all of the Chicago Stations have vacated their pre-auction channels. However, as explained below, it has become clear that, despite these efforts, as a result of special, rare and exceptional circumstances outside of the control of the Chicago Broadcasters construction of the post-auction facilities for the Chicago Stations will not be complete by the April 12 deadline. Accordingly, the Chicago Broadcasters respectfully request a third waiver of

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<sup>1</sup> Attachment A hereto lists the LMS File Numbers of the post-auction construction permits for the Chicago Stations.

<sup>2</sup> See Applications of WLS Television, Inc., NBC Telemundo License, LLC, Fox Television Stations, LLC, LMS File Nos. 0000108674, 0000108706, and 0000108713 (filed Mar. 23, 2020) (“First Waiver Request”); Letter from Barbara A. Kreisman, Chief, Media Bureau, FCC to the Chicago Stations, LMS File Nos. 0000108674, 0000108706, and 0000108713 (Apr. 18, 2020) (authorizing First Waiver Request).

<sup>3</sup> On August 26, 2020, the Chicago Stations requested a further waiver of the tolling standard and extension of their respective CPs through April 12, 2021. See Applications of WLS Television, Inc., NBC Telemundo License, LLC, Fox Television Stations, LLC, LMS File Nos. 0000120815, 0000120796, and 0000120787 (filed Aug. 26, 2020) (“Second Waiver Request”). The Second Waiver Request was granted on October 21, 2020. See Letter from Barbara A. Kreisman, Chief, Media Bureau, FCC to the Chicago Stations, LMS File Nos. 0000120815, 0000120796, and 0000120787 (Oct. 21, 2020) (authorizing Second Waiver Request).

the FCC's tolling standard to extend the post-auction CPs for the Chicago Stations for an additional six months, until **October 11, 2021**.<sup>4</sup>

Pursuant to FCC rules, a television broadcast station assigned a new channel during the broadcast incentive auction may seek a single, 180-day extension of its construction permit to enable more time to construct post-auction facilities.<sup>5</sup> Stations that require additional time may seek a waiver of the tolling standard set forth in Section 73.3598(b) of the FCC's rules upon a showing of rare and exceptional circumstances.<sup>6</sup> The Commission may waive a rule where the particular facts make strict compliance inconsistent with the public interest, special circumstances warrant a deviation from the general rule, and such deviation will serve the public interest.<sup>7</sup> As explained below, such special, rare and exceptional circumstances are present in the case of the Chicago Stations.

As the FCC is aware, the Chicago Stations broadcast from Willis Tower, a densely populated multi-tenant communications platform that supports many full-power television stations (including the Chicago Stations), three Class A television and several FM radio facilities.<sup>8</sup> All but four of the full-power and Class A television stations that broadcast from Willis Tower were assigned new channels as part of the repacking process.<sup>9</sup> In order to accomplish these channel changes, Willis Tower has planned, and is implementing, a complex repacking project that involves, *inter alia*, transitioning WLS (and its channel sharing partner WXFT) to a new post-auction main antenna to be installed on the east mast of Willis Tower ("East Mast") and transitioning each of WFLD (and its channel sharing partner WPWR-TV) and WMAQ-TV (and its channel sharing partner WSNS-TV) to new post-auction main antennas to be installed on the west mast of Willis Tower ("West Mast"). The project also involves installing a new auxiliary antenna for WLS (and its channel sharing partner WXFT) on the West Mast.<sup>10</sup> All of the work required to implement the repack, including the fabrication and installation of the

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<sup>4</sup> The 180<sup>th</sup> day after April 11, 2021 is October 9, 2021. However, because October 9, 2021 falls on a Saturday, the Chicago Broadcasters respectfully request that the Bureau extend the expiration date of the CPs to October 11, 2021 pursuant to the instant request for waiver of the tolling standard.

<sup>5</sup> 47 C.F.R. § 73.3700(b)(5)(i).

<sup>6</sup> See Incentive Auction Task Force and Media Bureau Remind Repacked Stations of Certain Post-Auction Transition Requirements and Deadlines, Public Notice, DA 18-884 (rel. Aug. 27, 2018) at ¶ 13 and n. 34. ("Stations may also seek a waiver of the tolling rule to receive additional time to construct in the case where "rare or exceptional circumstances" prevent construction." (citing 1998 Regulatory Review - Streamlining of Mass Media Applications, Rules and Processes, Memorandum Opinion and Order, 14 FCC Rcd 17525, 17536, para. 42 (1999)).

<sup>7</sup> See *Northeast Cellular Telephone Co. v. FCC*, 897 F.2d 1164, 1166 (D.C. Cir. 1990).

<sup>8</sup> See Attachment B for a list of stations that broadcast from Willis Tower.

<sup>9</sup> Specifically, the following full-power and Class A television stations at Willis Tower were assigned new channels during the incentive auction: WTTW, WCPX-TV, WFLD, WJYS, WMAQ-TV, WCIU-TV, WLS-TV (which channel shares with WXFT), WEDE-CD, WWME-CD, and WMEU-CD. Two of the full-power television stations, WPWR-TV and WSNS-TV, relinquished their channel assignments in order to channel share with WFLD and WMAQ-TV, respectively. Another two stations (WBBM-TV and WGN-TV) were assigned their pre-auction channels for their post-auction broadcasts.

<sup>10</sup> This auxiliary antenna will be shared with WTTW.

new post-auction main antennas, must be coordinated through, and cannot be completed without the involvement of, Willis Tower.<sup>11</sup>

Notwithstanding the complex nature of the post-auction transition for the broadcast stations located at Willis Tower, the Chicago Stations have been working diligently to complete the repack process in accordance with FCC rules and procedures. To this end, the Chicago Stations timely ceased broadcasts on their respective pre-auction channels by the end of Phase 6, and commenced post-auction operations using auxiliary or interim facilities. Moreover, since the Bureau granted the Chicago Broadcasters' most recent request to waive the tolling standard in October 2020, there has been some additional progress towards completing construction of their post-auction facilities, as described below. Nevertheless, as explained herein, for reasons outside of their control, the Chicago Stations will be unable to complete construction of their main post-auction facilities by April 12, 2021.

As explained in the First Waiver Request, the Chicago Stations contracted with Dielectric to manufacture the three main antennas that will be required for the post-auction facilities of WLS (and its channel sharing partner WXFT), WFLD (and its channel sharing partner WPWR-TV) and WMAQ-TV (and its channel sharing partner WSNS-TV) (collectively, the "Main Antennas"). In the fall of 2019, the structural engineer for Willis Tower informed the Chicago Stations that the Main Antennas had not been fabricated by Dielectric in accordance with the structural and welding specifications provided by Willis Tower and agreed upon by Dielectric. The Chicago Stations worked with Willis Tower and Dielectric to remedy this issue, and fabrication of all of the Main Antennas is now complete. In addition, Willis Tower has been taking steps to facilitate its applications for the necessary permits to complete the repack process, which includes permits to install the Main Antennas as well as the WLS auxiliary antenna system. For example, all of the required peer reviews of the structural engineering studies for the WLS auxiliary antenna system that will be installed on the West Mast have been completed, and the necessary permits for the West Mast auxiliary installation have passed zoning approvals are expected to be issued within the next few days.<sup>12</sup> The structural design of the East Mast, and the peer review of this design by an engineering firm selected by Willis Tower, is underway and once completed, the structural studies can be submitted to the City's engineering firm for peer review.

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<sup>11</sup> Willis Tower is coordinating and managing the antenna, tower and transmission line portion of the repack project at Willis Tower as well as performing all of the planning, structural design and actual work to complete the project. Willis Tower has created a project plan whereby the repack of the Chicago Stations will be implemented in three phases, as follows: (i) Phase I – complete installation of WLS/WTTW auxiliary antenna on the West Mast; (ii) Phase II – complete installation of the Main Antenna (as defined herein) for WLS on the East Mast; and (iii) Phase III – complete installation of the Main Antennas for WFLD and WMAQ on the West Mast. Until recently, Willis Tower had utilized a third party, Vertical Bridge, to implement the project plan. However, Vertical Bridge is no longer involved in the repack project. The removal of Vertical Bridge has caused some delays as Willis Tower works to transition the project to Willis Tower's engineering team, Jeremy Ruck & Associates, Inc. ("Jeremy Ruck"). The Chicago Stations appreciate the subsequent efforts of Jeremy Ruck to move this project forward but remain concerned that the new team may not have access to adequate resources to complete the repack project in conformance with the estimated timeframe most recently provided by Willis Tower. *See* Attachment C, Letter from Jeremy D. Ruck, PE, Willis Tower Broadcast, to WLS Television, Inc., *et al.*, March 9, 2021 (attaching schedule of estimated completion date for the construction milestones associated with the foregoing phases, as provided by Willis Tower to the Chicago Stations on March 3, 2021) (such letter the "Ruck Letter"), and such schedule, the "March 3 Project Schedule").

<sup>12</sup> *See* Ruck Letter at 1.

Lastly, as detailed below, there also has been progress on the ancillary tower work required to complete the repack project.

Despite these efforts, there are still several tasks that must be completed before the Chicago Stations can begin broadcasts with the facilities specified in their post-auction CPs, as follows:

- (1) Antenna Fabrication and Ancillary Tower Work. As explained above, fabrication of the Main Antennas has been completed, and the Main Antennas have been placed in storage until such time as they can be delivered to Willis Tower for installation. However, all of the parts required for installation of the Main Antennas have not yet been delivered to the warehouse. Once the remaining parts are delivered, the Main Antennas will be assembled and tested at the warehouse and, assuming successful results, the Main Antennas then will be disassembled for delivery to Willis Tower for installation.<sup>13</sup>

As noted in the Chicago Stations' prior waiver requests, concurrently with the fabrication process for the Main Antennas, Willis Tower has been undertaking ancillary tower work, such as tower interface and dampening, as well as structural reinforcements and construction of climbing facilities.<sup>14</sup> Since grant of the Second Waiver Request, construction of the new wedding cake antenna mount required for the post-auction facilities of WFLD (and its channel sharing partner WPWR-TV) and WMAQ-TV (and its channel sharing partner WSNS-TV) has been completed, as has fabrication of the damper tanks. Thus, although there has been some progress with the ancillary tower work, there is still ancillary work in progress, including the fabrication of the climbing equipment and damper frames,<sup>15</sup> and fabrication of a second wedding cake antenna mount that will be used to attach the WMAQ antenna to the building mast.<sup>16</sup>

- (2) Structural Engineering and Permits. Willis Tower is relocating some of the broadcast stations, including the Chicago Stations, to new antennas and supporting structures. In order to accomplish this task, it is necessary to obtain structural permits to install the WFLD and WMAQ Main Antennas on the West Mast, to install the WLS Main Antenna on the East Mast, and to install an auxiliary antenna for WLS on the West Mast. As a prerequisite to apply for these permits, Willis Tower must have completed structural engineering studies to determine whether the new antennas and supporting structures comply with the ANSI/TIA-222-G structural standard, the standard required by the city of Chicago.<sup>17</sup> The structural studies then are submitted for peer review.<sup>18</sup> As noted

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<sup>13</sup> See *supra* at note 11 (discussing Willis Tower phased installation plan).

<sup>14</sup> See First Waiver Request at note 9; Second Waiver Request at 4.

<sup>15</sup> The design for the climbing equipment and damper frames has been approved and, assuming no unexpected issues arise, fabrication is expected to be complete in approximately four to five weeks. See Ruck Letter at 1.

<sup>16</sup> Design of the second wedding cake antenna mount is still being completed by the Willis Tower structural engineer.

<sup>17</sup> It is the Chicago Stations' understanding that Willis Tower began the structural engineering process in the summer of 2017 but, due to the complexity of the project, this process has been ongoing.

<sup>18</sup> Willis Tower is using a peer review process for the structural engineering studies. During the peer review, the structural studies will be independently evaluated by at least two professional engineering firms (one

above, all of the required peer reviews of the structural engineering studies for the WLS auxiliary antenna system that will be installed on the West Mast have been completed, and the necessary permits for the West Mast installation from the City have passed zoning approval and are expected to be issued within the next few days.<sup>19</sup> In addition, the structural design of the East Mast, and the peer review of this design by an engineering firm selected by Willis Tower, is underway. Willis Tower estimates the structural engineering studies for installation of the Main Antennas on the East Mast will be submitted for peer review by the City at the end of March, and the studies for the West Mast will be submitted for City peer review at the end of June.<sup>20</sup> Once Willis Tower has completed the necessary structural engineering studies and associated peer reviews, it can begin the process of applying for structural permits required by the city of Chicago for installation of the Main Antennas.<sup>21</sup> In the Chicago Broadcasters' experience, it will take a minimum of thirty days from the date of application for the city of Chicago to approve the structural permits but can extend longer, particularly if there is a need to involve the Alderman's office.

- (3) Zoning Requirements. As noted in the Second Waiver Request, the Chicago Broadcasters have learned that the Chicago Building Department is requiring Willis Tower to submit zoning drawings for each of the planned antenna installations, i.e., the installation of the WLS auxiliary antenna on the West Mast, the installation of the WLS Main Antenna on the East Mast, and the installation of the WFLD and WMAQ Main Antennas on the West Mast.<sup>22</sup> This process may interject additional delay into the construction project as Willis Tower and the Chicago Broadcasters work to obtain any zoning approvals from the Chicago Building Department as may be required to implement the repack project for the Chicago Stations. For example, the zoning drawings for the West Mast auxiliary installation have only recently been approved by the Chicago Building Department. Because the structural analyses for the Main Antennas will inform whether and which zoning approvals may be necessary to complete these installations, the Chicago Stations

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engaged by Willis Tower and one identified by the city of Chicago) to verify the results. The use of a peer review process can shorten the timeline to obtain structural permits for the installation of the Main Antennas because, in the absence of peer review, the city of Chicago would conduct more in-depth analyses of the structural engineering studies performed by Willis Tower.

<sup>19</sup> See Ruck Letter at 1. Jeremy Ruck estimates that installation of the WLS auxiliary antenna system can be completed in approximately two weeks after the City issues the permits for the West Mast installation. *Id.*

<sup>20</sup> See March 3 Schedule (estimating dates for East and West Tower permit submission to Hunter Trankina Engineering, the engineering firm utilized by the City). Given the commonalities between the auxiliary design and the design for the WMAQ and WFLD Main Antenna installations on the West Mast, it is likely that the structural engineering work for the auxiliary antenna can be leveraged to expedite the structural design and associated peer reviews for the WMAQ and WFLD Main Antenna installations on the West Mast. See Ruck Letter at 2 ("We expect that the additional peer review process will require less time due to increased familiarity with what is being asked of our team, and what is received by the team for the City.").

<sup>21</sup> It is the Chicago Broadcasters' understanding that Willis Tower intends to submit each of the three permit applications individually as soon as the required structural engineering studies and associated peer reviews are completed. At this time, the Chicago Broadcasters do not anticipate the need for permits other than the structural permits and the helicopter lift permits described elsewhere herein, though as noted in the text, the Chicago Building Department has now requested zoning drawings, such that is possible that approvals from the Chicago Building Department also may be required, as has been the case for the West Mast auxiliary antenna.

<sup>22</sup> See *supra* at note 11 (describing Willis Tower's phased repack plan).

cannot state with certainty whether zoning approvals will be required and, if so, how long the necessary approvals will take, until the Main Antenna structural analyses are complete.

- (4) Installation by Helicopter Lift. In order for the Chicago Stations to commence operations of their post-auction main facilities, it is necessary to first remove the existing, pre-auction channel main antennas<sup>23</sup> and then install the three new Main Antennas on the applicable support structure at Willis Tower. Both the removal and installation of antennas must be done via helicopter lifts, which require approvals and permits from the city of Chicago. According to information provided by Willis Tower, at present, six helicopter lifts will be required to remove the antennas currently at Willis Tower and install the three new Main Antennas.<sup>24</sup> Given the constraints imposed by the city of Chicago,<sup>25</sup> the helicopter lift process may take as long as twelve weeks, even in the absence of adverse weather conditions.<sup>26</sup>

As demonstrated above, completion of construction of the facilities specified by the post-auction CPs is a complex, multi-step process, with the vast majority of the steps outside of the control of the Chicago Broadcasters. In light of these special, rare and exceptional circumstances, further waiver of the tolling standard to provide the Chicago Broadcasters with additional time to complete construction of the post-auction main facilities for the Chicago Stations. Grant of this request to extend the Chicago Stations' CPs to **October 11, 2021** will not harm the public interest because the Chicago Stations all have ceased broadcasts on their respective post-auction channels, and are presently serving their viewers on their post-auction channels.

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<sup>23</sup> The Chicago Stations have requested that, to the extent possible, Willis Tower coordinate the removal of the existing pre-auction main antennas as soon as feasible in order to mitigate the number of helicopter lifts needed at the time the Main Antennas are ready to install. As indicated on the March 3 Project Schedule, Willis Tower presently anticipates removing WLS's channel 44 antenna at the end of May, and removing the antenna stack used for WMAQ and WFLD's pre-auction transmissions at the end of June.

<sup>24</sup> See March 3 Project Schedule, at Attachment C.

<sup>25</sup> In the Chicago Stations' experience, the city of Chicago typically approves the use of a helicopter for approximately two hours on Sunday mornings, and requires that these lifts be done at certain times during the month so as to minimize disruptions to the public.

<sup>26</sup> Notably, because installation of the Main Antennas requires the use of a helicopter, the installation cannot be completed in adverse weather conditions, such as the harsh winds common to the Chicago area.

**Attachment A**  
**Post-Auction Construction Permits**

<b>Call Sign</b>	<b>CP File No.</b>	<b>CP Extension File No.</b>	<b>First Tolling Request File No.</b>	<b>Channel Share Partner</b>
WLS-TV	0000034300	0000078137	0000108713	WXFT
WFLD	0000072366	0000082055	0000108674	WPWR-TV
WMAQ-TV	0000080396	0000078105	0000108706	WSNS-TV

**Attachment B**  
**Willis Tower Broadcast Stations**

<b>Callsign</b>	<b>City of License</b>	<b>Facility</b>	<b>Service</b>
WBBM-TV	Chicago, IL	9617	DT
WTTW	Chicago, IL	10802	DT
WCPX-TV	Chicago, IL	10981	DT
WFLD	Chicago, IL	22211	DT
WJYS	Hammond, IN	32334	DT
WMAQ-TV	Chicago, IL	47905	DT
WPWR-TV	Gary, IN	48772	DT
WSNS-TV	Chicago, IL	70119	DT
WCIU-TV	Chicago, IL	71428	DT
WGN-TV	Chicago, IL	72115	DT
WLS-TV	Chicago, IL	73226	DT
WXFT	Aurora, IL	60539	DT
WEDE-CD	Arlington Heights, IL	66978	DC
WWME-CD	Chicago, IL	71425	DC
WMEU-CD	Chicago, IL	168662	DC
WTMX	Skokie, Illinois	6377	FM
WBBM-FM	Chicago, IL	9613	FM
WFMT(FM)	Chicago, IL	10801	FM
WJMK(FM)	Chicago, IL	28621	FM
WGCI-FM	Chicago, IL	51165	FM
WEBG(FM)	Chicago, IL	53971	FM
WLIT-FM	Chicago, IL	70042	FM
WCFS-FM	Elmwood Park, IL	71283	FM
WLS-FM	Chicago, IL	73228	FM
WKSC-FM	Chicago, IL	74178	FM



**Attachment C**

**Letter from Jeremy D. Ruck, PE, Willis Tower Broadcast,  
to WLS Television, Inc., et al., March 9, 2021 (March 3 Schedule attached)**

[See attached]

Jeremy D. Ruck, PE  
Principal Engineer

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# JEREMY RUCK & ASSOCIATES, INC.

March 9, 2021

WLS Television, Inc.  
Mr. Bradley Plant  
190 North State Street  
Chicago, IL 60601

NBC Telemundo License, LLC  
Mr. Randy King  
454 Columbus Drive  
Chicago, IL 60611

Fox Television Stations, LLC  
Mr. Ted Chavez  
205 N. Michigan Avenue  
Chicago, IL 60601

Window to the World Communications, Inc.  
Mr. Michael Tompary  
5400 North Saint Louis Avenue  
Chicago, IL 60625

RE: Willis Tower Repack Work Status

Gentlemen,

I am writing to you today regarding the progress of repack construction at Willis Tower, the impending expiration of your respective construction permits, and to provide information in support of an additional tolling request before the Commission. Please reference the attached milestones exhibit

As you are all aware, the past calendar year has been very trying for the Chicago metropolitan area, and Willis Tower in particular. From the ongoing COVID-19 pandemic, to the water intrusion event at Willis in May of 2020, and subsequent rounds of civil unrest in the City, our construction efforts have been hampered. Additionally, we have undergone additional delays due to the peer review process required by the City of Chicago. Finally, due to the requirements of the City, and the unique location of the building, scheduling helicopter work is not only difficult, but we were advised around the middle part of last year that there were no available dates remaining for helicopter work due to the construction activities of other stations in other markets.

As of this date, we have been advised by the City that the permit for the West Tower RFS antenna installation, which is the authorized main antenna for WTTW, and the authorized auxiliary antenna for WLS-TV, has passed zoning approval, and is now in final approval. Our team is expecting that that permit will now likely be issued within the next few days. The installation of the antenna will begin immediately after the issuance of this permit, and it is expected to last approximately two weeks. This will likely put the conclusion of this installation very close to the current expiration of the WTTW main antenna construction permit. To be on the safe side, it may be advisable for WTTW to seek an additional extension of the construction permit to accommodate any unforeseen problems.

You may be aware of recent events in the industry, whereby toe cracks have been discovered in antennas, which appears to be the result of vortex shedding. Our structural engineering teams have been concerned about this phenomenon for many years now, and is working to ensure the motion of the top mount antennas on the East and West Towers are properly damped. Material is being procured for these components, with final assembly to be completed soon. Significant study and design work has gone into these systems due to the potential for significant property damage, or more seriously, loss of life if a failure occurs.

Permitting work for the East Tower changeout for WLS-TV, and the West Tower changeout for WFLD and WMAQ-TV is continuing with packages going to peer review soon, and the acquisition of related permits, including those for the removal of the dormant antennas following shortly thereafter. We expect that the additional peer review process will require less time due to increased familiarity with what is being asked of our team, and what is received by the team for the City. Note that the required City peer review is in addition to the internal peer review process that our team follows. Between the installation projects we will also be working on the decommissioning of legacy infrastructure, and preparation for removal and replacement of the top mounted antennas.

Our present milestone forecast indicates that we should complete the installation of all antennas within an additional 180-day extension beyond the current expiration dates of April 12, 2021. As previously discussed, the WTTW main antenna installation is forecast to be completed well in advance of that 180 day time frame, and will be the next main antenna installation completed. WLS-TV on the East Tower will follow, with a wrap up occurring with the new double stack antenna configuration for WFLD and WMAQ-TV.

We will continue to provide updates on progress, including necessary modifications to the milestones as they are achieved. Additionally, we will continue to hold the weekly conference calls for all involved stations. As always, please feel free to contact me directly, or any of the other members of the Willis Tower team.

Regards,

A handwritten signature in black ink, appearing to read 'Jeremy D. Ruck', with a long horizontal flourish extending to the right.

Jeremy D. Ruck, PE  
Willis Tower Broadcast

# Willis Tower Broadcast - 2021 Estimated Repack Construction Milestones

ISSUED: 3/3/2021

Project Milestone	Start Date	End Date	East Side of Roof	West Side of Roof	Helicopter Lift	WLS-TV MAIN (ABC)	WMAQ-TV (NBC)	WFLD (FOX)	WTTW MAIN	WLS-TV STANDBY (ABC)	NOTES
RFS Permit Peer Review Completed		1/19/2021		X					X	X	
East/West Fiberglass ladder design release for fabrication		3/1/2021	X	X		X	X	X			Received Malouf approval
Damper Frame Design Release for Fabrication		3/1/2021	X	X		X	X	X			
RFS Antenna Permit Received		PENDING		X				X	X		Awaiting approval by City of Chicago Zoning
East Tower Permit Submission to Trankina		3/29/2021	X			X					
Complete Remaining Items on RFS Antenna Installation	2/5/2021	PENDING		X				X	X		Awaiting approval by City of Chicago Zoning
Phasing and Testing of RFS Antenna	2/25/2021	PENDING		X				X	X		1-2 weeks after installation
Complete Decommissioning of WLS-TV 44 Antenna	4/15/2021	5/15/2021	X			X					ESTIMATED
Release West Tower Wedding Cake to Rohn	3/26/2021	4/1/2021		X			X	X			
Removal of WLS-TV 44 Antenna	4/15/2021	4/30/2021	X		X	X					
Installation of new WLS-TV 22 Antenna	5/30/2021	5/30/2021	X		X	X					
WLS-TV 22 Testing and Commissioning	5/30/2021	6/4/2021	X			X					
Preparation of West Triple Stack for Removal	4/30/2021	5/28/2021		X			X	X			Dependent upon installation of RFS antenna. Triple stack required for rigging
West Tower Permit Submission to Trankina	6/25/2021	7/15/2021		X			X	X			
Removal of West Triple Stack		6/20/2021		X	X		X	X			
Installation of new West Double Stack	9/15/2021	10/3/2021		X	X		X	X			
Testing and Commissioning of West Double Stack	8/1/2021	8/15/2021		X			X	X			
Complete Decommission and removal of East Poles		9/1/2021	X		X	X	X	X	X		
Complete Decommission and removal of West Poles		9/15/2021		X	X			X	X		
Complete Installation of West Bridge Support		10/1/2021		X							

\*Dates are projected dates