

**A Report To The  
Corporation for Public Broadcasting  
Regarding**

**Potential Impacts To  
Public Radio Transmission  
Facilities From  
TV Band Repacking**



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## **Executive Summary**

The firm of Meintel, Sgrignoli, and Wallace, LLC (MSW) is pleased to provide the following report to the Corporation for Public Television (CPB) in response to its Scope of Work to provide Post-Auction Spectrum Planning services to CPB. Specifically, MSW was tasked with studying the potential impacts to Public Radio Station Transmitter Facilities that may result from the TV Band Repack and associated DTV Station channel changes and facility modifications.

Digital Television stations will be repacked to channels 2-36 after the completion of the FCC's Incentive Auction. These channel changes are likely to impact some Public Radio stations that share a tower or are near-co-located with a television station.

There are several possible impacts ranging from down-time during rigging and derigging operations to loss of tower space and possible relocation due to tower structural limits. The specific impact is highly dependent upon the specific tower situation as well as the new channel assigned to the co-located TV Station(s).

### **A. Potentially Impacted Radio Stations**

MSW has conducted a study to determine the number of CPB Eligible Radio Stations that are co-located on the same tower as one or more TV Stations. The study indicates that approximately 95 CPB-Eligible radio stations are co-located with a Full Power TV station or Class A TV station that may be repacked as part of the FCC's repacking process. See Appendix A for a list of stations meeting this criterion.

Furthermore, of these 95 stations that are co-located with a full power or class A TV stations, 34 of them are co-located on a tower with a station that is currently operation on channels 38-51 (the FCC Clearing Spectrum). These stations will most certainly be impacted as these TV stations will either be repacked or go off the air as a "winner" in the FCC Incentive Auction. See Appendix B for a list of stations meeting this criterion.

In addition, MSW conducted a study to determine the number of CPB Eligible Radio Stations that are near-co-located (within 250 Meters) of one or more TV Stations. The study indicated that approximately 152 CPB-Eligible radio stations are near-co-located within 250 meters of a full-power or class A TV station. These near-co-located stations may also be impacted to a lesser extent. However, there is still some potential for impact to these stations such as reduced power operation to meet RFR compliance requirements. See Appendix C for a list of these stations.

### **B. Possible Repack Effects**

There are a number of possible scenarios and situations that could lead to an impact on a public radio station. These impacts range the gamut from some off-air or reduced power

operation to loss of the stations antenna location due to overloading of the tower structure and the need to remove loads to accommodate the new DTV antennas on the tower structure.

Below we've attempted to list the most likely situations or scenarios that radio stations will likely face with the facility modifications required for the DTV repack.

- **RF Radiation Compliance** – The radio station may need to reduce power or go off the air during rigging and derigging operations on a shared tower structure. Stations may also find that reduced power or off-air time is required for tower crews working in or near the aperture of the FM radio station.
- **Tower Rigging in Aperture of FM Antenna** – Stations may find that gin poles, transmission lines, or other rigging requires the temporary removal of the FM antenna in order to accommodate the construction or installation of the new DTV antenna.
- **Transmission Line Changes** – FM Stations may find that transmission lines for their facilities or those of the DTV station need to be relocated on the tower to accommodate new loads, changes in routing, or other necessary changes.
- **Tower Structural Loading Changes** – Stations may find that new DTV antennas are much larger structural loads (lower frequency) which require the removal of other loads in order to accommodate the new DTV antenna. Several scenarios are possible here such as reduced FM antenna aperture, removal of the FM Antenna in order to free up structural capacity, or possibly the need to change the height or location of the FM antenna in order to meet the structural loading limits of the tower.
- **New Structural Loading Standard** – There are new structural standards in place now EIA-222-G is the current standard. Many structures will not pass the loading analysis under the new standard and may need to be significantly modified in order to support the new DTV antenna. In the worst case scenario, for some towers it may not be feasible to modify them to meet the new structural standards in which case, they may need to be completely replaced with a new tower. There exist many towers that were built under the EIA-222-C revision and may not be candidates for structural modifications without significant reduction in loading.
- **Removal of Old Antennas and Transmission Lines** – Some TV stations that have “won” in the auction and have agreed to give up their existing TV Channel, may need to remove their decommissioned equipment and this process of equipment removal may impact radio stations significantly.
- **TV Station Auxiliary or Temporary Antennas** – The FCC has a very aggressive schedule for the TV Band Repack. This schedule is broken into 10 phases over 39 months. Many TV Stations are unlikely to be able to complete the construction of the final DTV Facilities within the 39 month (or shorter) construction window. Therefore, many TV stations are likely to build “temporary” facilities with side-mounted antennas. In this case, additional space may be needed on the tower to accommodate the temporary facilities that many TV stations are likely to build.

- **Helicopter Lifts** – For some of the very large community tower structures (such as Willis Tower and others), the most efficient antenna removal and installation technique may involve using Helicopter Cranes for some of the work. These operations generally require stations to go off the air or significantly reduce power during these operations.
- **All Stations on the same tower may not be scheduled together** – The FCC has laid out a 10-phase transition schedule for TV Stations to build their new facilities and place them on the air in a staggered fashion. At this time, however, it is not known if all stations on the same tower would be scheduled in the same phase. Therefore, radio stations may find that they have several stations making changes at different times and therefore may have to accommodate two or three different facility changes that are scheduled months apart.
- **Facility AC Power System Modifications** – Stations may find the in order to accommodate new transmitters, some electrical distribution system modifications are necessary for the site. Consequently, stations may find that some off-air time is required in order to allow electrical system modifications and construction as well as transitioning to new AC circuits.
- **Tower Crew Availability Will Be Limited** – Stations should be prepared for constraints in the availability of tower crews during the 39 months construction period. Tower Crews will likely be unavailable for regular maintenance operations as well as for emergency antenna or transmission line burn outs or repairs. Since most crews will be busy working on the TV station projects, radio stations may find it difficult to find crews to work with on their antenna projects and other tower work. Any tower or antenna work that radio stations anticipate completing in the next three years should be completed immediately or deferred until after the TV Repack is completed. See Appendix D for sample Station Phase Assignment and Construction Schedule.

### **C. No FCC Reimbursement for Radio Station Costs**

The FCC has made it clear that there will be no reimbursement of costs for radio station changes unless there is a written contractual obligation for the TV station to pay for the radio station facility modifications. Consequently, it is not expected that any of the FCC Relocation Funds will be available to radio stations for their expenses.

Consequently, radio stations should prepare for the expenses that are likely to be incurred by them and not reimbursable from the FCC. Budgeting for these scenarios would be prudent, given that the FCC schedule is very aggressive and will not likely be sympathetic to TV or radio stations that cause delays in their repacking schedule.

### **D. Potential Station Mitigation**

As noted above, there will be various situations and scenarios that may develop on the shared tower structures occupied by both Radio and TV Stations. Planning for these

impacts and potential service disruptions should be undertaken immediately to ensure that stations are prepared. There are some potential options that radio stations should consider to minimize the impact on their operations.

The best mitigation will vary from station-to-station and market-to-market, however, the following solutions may be useful for stations to consider:

- **Off Site Auxiliary or Temporary Operations** – The best logistical solution would be to operate from another site and tower some distance away while construction is underway on the main tower structure.
- **Off Site Auxiliary or Temporary Operations on Combined Antenna** – Another possibility would be to operate temporarily on a combined antenna system that is on another structure away from the main tower site.
- **Auxiliary Antenna Mounted in Location Away from Tower Workers** – If another tower site is not an option, and operations must continue at the existing site. A temporary or Aux antenna mounted at a lower height or in a location that would allow workers to work in the FM Aperture would allow continued operations during modification work. Options such as a single bay mounted on a lower section of the tower may be viable or at least minimize the off-air time.
- **Combine with Other Stations for Temporary / Aux Antenna on the same tower** – Combining with other stations on a temporary antenna on another structure would allow stations to continue to operate without the need to power up/down during the times workers are near the main antenna. By spreading the costs across several stations, this may be an economical solution.

### **E. Suggested Station Preparation Steps**

Stations should be prepared for possible impacts and disruptions from the DTV repack. It is suggested that stations take the following steps to prepare their facilities and stations in case the disruption to station operations become unavoidable.

- Research which DTV stations are on your shared tower and where they are located relative to your radio station antenna.
- Understand which stations will likely be affected by the TV Band Repacking such as stations within the Channel 38-51 clearing target.
- Understand which stations were “winners” in the spectrum auction and will be vacating their existing channel – and antenna aperture.
- Understand that the FCC will repack approximately 500+ stations in the Core Spectrum Channels 2-36. Determine which stations on your shared tower will be changing channels.
- Understand the FCC Phase Assignment process and which phases have been assigned to the DTV stations on your shared tower. These are the deadlines the TV Stations must meet for their project. (See Appendix D).
- What is the plan for the DTV station antenna and transmission line change out?

- What is the rigging plan and will there be a requirement to remove any FM Antenna sections?
- What is required of your station to power up/down when workers are on the tower?
- Is relocation of the FM Station antenna or other equipment required?
- Will there be any changes to the AC Power Distribution?

### **Conclusions:**

Based upon the forgoing study, there are a significant number of CPB-Eligible public radio stations that may potentially be impacted by the FCC TV Spectrum Repacking.

The MSW study indicates that approximately 152 CPB-Eligible radio stations are near-co-located (within 250 meters) with a full power or class A TV station that may potentially be repacked.

Furthermore, approximately 95 CPB-Eligible radio stations are co-located on the same tower structure as a full power or class A TV station that may potentially be repacked. Of these 95 stations, 34 of them are co-located on a tower structure with a TV station currently operating on channels 38-51 which will certainly be impacted by the repack.

The constraints on tower crews and other resources may make any changes or modifications to radio facilities problematic as tower crews with broadcast experience will likely be otherwise engaged with TV Repack projects.

Public Radio Stations should understand the potential impacts to their operations, develop a plan on how to accommodate those impacts, as well as develop a budget for the expenses that are likely to be incurred and not reimbursed by the FCC.

**APPENDIX A**

**CPB Eligible Radio Stations Co-Located  
With Full Power or Class A TV Stations**

**CPB Eligible Full Service FM at Site of Full Service or Class A DTV Stations**

Number of DTV Stations					FM STATION				
Total	Low VHF	High VHF	UHF 14-36	UHF 38-51	Facility ID	Call	City	State	Status
1	0	1	0	0	65303	KAMU-FM	COLLEGE STATION	TX	LIC
1	0	1	0	0	4273	KANW	ALBUQUERQUE	NM	LIC
1	0	0	1	0	42912	KBPR	BRAINERD	MN	LIC
3	0	1	2	0	6325	KBSU-FM	BOISE	ID	LIC
1	0	0	1	0	53317	KCND	BISMARCK	ND	LIC
1	0	0	1	0	14738	KCUR-FM	KANSAS CITY	MO	LIC
1	0	0	1	0	4317	KDAQ	SHREVEPORT	LA	LIC
1	0	0	0	1	17380	KDHX	ST. LOUIS	MO	LIC
1	0	1	0	0	68668	KEXP-FM	SEATTLE	WA	LIC
1	0	0	1	0	29126	KIWR	COUNCIL BLUFFS	IA	LIC
3	0	3	0	0	35289	KNBA	ANCHORAGE	AK	LIC
8	0	2	4	2	50607	KOPB-FM	PORTLAND	OR	LIC
1	0	1	0	0	58823	KPBS-FM	SAN DIEGO	CA	LIC
1	0	0	0	1	59343	KQAC	PORTLAND	OR	LIC
1	0	0	1	0	37766	KRCL	SALT LAKE CITY	UT	LIC
1	0	0	1	0	66595	KRVS	LAFAYETTE	LA	LIC
4	0	1	3	0	42911	KSJN	MINNEAPOLIS	MN	LIC
3	0	3	0	0	805	KSKA	ANCHORAGE	AK	LIC
1	0	1	0	0	50622	KSOR	ASHLAND	OR	LIC
1	0	0	1	0	4296	KUAR	LITTLE ROCK	AR	LIC
1	0	0	1	0	3383	KUAZ-FM	TUCSON	AZ	LIC
1	0	0	1	0	69171	KUER-FM	SALT LAKE CITY	UT	LIC
1	0	1	0	0	69150	KUHF	HOUSTON	TX	LIC
2	0	1	1	0	69158	KUNI	CEDAR FALLS	IA	LIC
1	0	1	0	0	6083	KUNM	ALBUQUERQUE	NM	LIC
1	0	1	0	0	66571	KUOW	SEATTLE	WA	LIC
6	0	0	4	2	69318	KUSC	LOS ANGELES	CA	LIC
1	0	0	0	1	69395	KVNO	OMAHA	NE	LIC
4	0	2	0	2	66586	KWGS	TULSA	OK	LIC
1	0	0	1	0	65585	KWMU	ST. LOUIS	MO	LIC
2	0	0	1	1	22167	KXCI	TUCSON	AZ	LIC
1	0	0	0	1	50038	KXWT	ODESSA	TX	LIC
1	0	0	1	0	6051	WAPS	AKRON	OH	LIC
13	0	3	6	4	51249	WBAI	NEW YORK	NY	LIC
5	1	0	1	3	66649	WBEZ	CHICAGO	IL	LIC
2	1	0	1	0	48699	WBGO	NEWARK	NJ	LIC
1	0	0	0	1	4240	WBHM	BIRMINGHAM	AL	LIC
1	0	0	0	1	18185	WBRH	BATON ROUGE	LA	LIC
3	0	0	3	0	68241	WBUR-FM	BOSTON	MA	LIC
1	0	0	0	1	6610	WCBU	PEORIA	IL	LIC
7	0	0	4	3	11675	WCLK	ATLANTA	GA	LIC
1	0	0	1	0	66284	WCNY-FM	SYRACUSE	NY	LIC
1	0	0	1	0	10016	WCVE-FM	RICHMOND	VA	LIC
1	0	0	0	1	4030	WDNA	MIAMI	FL	LIC
1	0	0	1	0	61582	WDPR	DAYTON	OH	LIC
1	0	0	0	1	18307	WEKU-FM	RICHMOND	KY	LIC
4	0	0	2	2	63030	WERN	MADISON	WI	LIC
2	0	1	0	1	69436	WFAE	CHARLOTTE	NC	LIC
1	0	0	1	0	68269	WFIU	BLOOMINGTON	IN	LIC
1	0	0	1	0	38621	WFPK	LOUISVILLE	KY	LIC
1	0	0	0	1	21799	WFSU-FM	TALLAHASSEE	FL	LIC
2	0	0	2	0	6126	WGUC	CINCINNATI	OH	LIC
3	0	0	1	2	22656	WHQR	WILMINGTON	NC	LIC



1	0	1	0	0	68940	WILL-FM	URBANA	IL	LIC
3	0	0	1	2	53860	WIPR-FM	SAN JUAN	PR	LIC
3	0	1	2	0	73125	WJCT-FM	JACKSONVILLE	FL	LIC
1	0	0	1	0	23927	WJSP-FM	WARM SPRINGS	GA	LIC
1	0	0	0	1	41683	WKAR-FM	EAST LANSING	MI	LIC
1	0	0	0	1	34045	WKSU-FM	KENT	OH	LIC
1	0	0	1	0	66339	WLRN-FM	MIAMI	FL	LIC
1	0	0	0	1	39655	WMEA	PORTLAND	ME	LIC
1	0	0	1	0	12857	WMFE-FM	ORLANDO	FL	LIC
6	1	2	2	1	73266	WMHT-FM	SCHENECTADY	NY	LIC
1	0	0	1	0	43765	WMKY	MOREHEAD	KY	LIC
5	0	1	3	1	47459	WMNF	TAMPA	FL	LIC
1	0	0	1	0	46682	WMPN-FM	JACKSON	MS	LIC
1	0	1	0	0	67801	WNIN-FM	EVANSVILLE	IN	LIC
1	0	1	0	0	49572	WNMU-FM	MARQUETTE	MI	LIC
13	0	3	6	4	73355	WNYC-FM	NEW YORK	NY	LIC
3	1	2	0	0	29118	WOI-FM	AMES	IA	LIC
2	0	0	2	0	3596	WORT	MADISON	WI	LIC
1	0	0	1	0	50149	WOUB-FM	ATHENS	OH	LIC
7	0	1	3	3	54002	WQED-FM	PITTSBURGH	PA	LIC
2	0	0	1	1	6056	WRCJ-FM	DETROIT	MI	LIC
1	0	0	1	0	53834	WRKF	BATON ROUGE	LA	LIC
1	0	0	0	1	58660	WSCL	SALISBURY	MD	LIC
1	0	0	0	1	58515	WSHU-FM	FAIRFIELD	CT	LIC
1	0	1	0	0	23926	WSVH	SAVANNAH	GA	LIC
1	0	0	0	1	67461	WTMD	TOWSON	MD	LIC
1	0	0	1	0	66604	WUFT-FM	GAINESVILLE	FL	LIC
1	0	0	0	1	4303	WUKY	LEXINGTON	KY	LIC
1	0	0	1	0	66581	WUNC	CHAPEL HILL	NC	LIC
2	0	0	2	0	69161	WUOT	KNOXVILLE	TN	LIC
2	0	0	1	1	69325	WUTC	CHATTANOOGA	TN	LIC
1	0	0	1	0	4285	WUWM	MILWAUKEE	WI	LIC
1	1	0	0	0	3242	WVIK	ROCK ISLAND	IL	LIC
1	0	1	0	0	52866	WVLS	MONTEREY	VA	LIC
1	0	1	0	0	71689	WVPB	BECKLEY	WV	LIC
1	0	0	1	0	19365	WVPE	ELKHART	IN	LIC
2	0	0	2	0	69952	WVPS	BURLINGTON	VT	LIC
1	0	0	1	0	70241	WVUB	VINCENNES	IN	LIC
1	0	0	1	0	68229	WXPN	PHILADELPHIA	PA	LIC
2	0	1	1	0	74218	WXXI-FM	ROCHESTER	NY	LIC
1	0	0	1	0	42669	WYMS	MILWAUKEE	WI	LIC
1	0	0	0	1	74434	WYSU	YOUNGSTOWN	OH	LIC
<b>192</b>	<b>5</b>	<b>42</b>	<b>92</b>	<b>53</b>					<b>95</b>

## **APPENDIX B**

### **CPB-Eligible Radio Stations Co-Located With Full Power or Class A TV Stations On Channels 38-51 (Cleared Spectrum)**

**CPB Eligible Full Service FM at Site of Full Service or Class A DTV Stations**

Number of DTV Stations					FM STATION				
Total	Low VHF	High VHF	UHF 14-36	UHF 38-51	Facility ID	Call	City	State	Status
1	0	0	0	1	17380	KDHX	ST. LOUIS	MO	LIC
8	0	2	4	2	50607	KOPB-FM	PORTLAND	OR	LIC
6	0	0	4	2	69318	KUSC	LOS ANGELES	CA	LIC
1	0	0	0	1	69395	KVNO	OMAHA	NE	LIC
4	0	2	0	2	66586	KWGS	TULSA	OK	LIC
2	0	0	1	1	22167	KXCI	TUCSON	AZ	LIC
1	0	0	0	1	50038	KXWT	ODESSA	TX	LIC
13	0	3	6	4	51249	WBAI	NEW YORK	NY	LIC
5	1	0	1	3	66649	WBEZ	CHICAGO	IL	LIC
1	0	0	0	1	4240	WBHM	BIRMINGHAM	AL	LIC
1	0	0	0	1	18185	WBRH	BATON ROUGE	LA	LIC
1	0	0	0	1	6610	WCBU	PEORIA	IL	LIC
7	0	0	4	3	11675	WCLK	ATLANTA	GA	LIC
1	0	0	0	1	4030	WDNA	MIAMI	FL	LIC
1	0	0	0	1	18307	WEKU-FM	RICHMOND	KY	LIC
4	0	0	2	2	63030	WERN	MADISON	WI	LIC
2	0	1	0	1	69436	WFAE	CHARLOTTE	NC	LIC
1	0	0	0	1	21799	WFSU-FM	TALLAHASSEE	FL	LIC
3	0	0	1	2	22656	WHQR	WILMINGTON	NC	LIC
3	0	0	1	2	53860	WIPR-FM	SAN JUAN	PR	LIC
1	0	0	0	1	41683	WKAR-FM	EAST LANSING	MI	LIC
1	0	0	0	1	34045	WKSU-FM	KENT	OH	LIC
1	0	0	0	1	39655	WMEA	PORTLAND	ME	LIC
6	1	2	2	1	73266	WMHT-FM	SCHENECTADY	NY	LIC
5	0	1	3	1	47459	WMNF	TAMPA	FL	LIC
13	0	3	6	4	73355	WNYC-FM	NEW YORK	NY	LIC
7	0	1	3	3	54002	WQED-FM	PITTSBURGH	PA	LIC
2	0	0	1	1	6056	WRCJ-FM	DETROIT	MI	LIC
1	0	0	0	1	58660	WSCL	SALISBURY	MD	LIC
1	0	0	0	1	58515	WSHU-FM	FAIRFIELD	CT	LIC
1	0	0	0	1	67461	WTMD	TOWSON	MD	LIC
1	0	0	0	1	4303	WUKY	LEXINGTON	KY	LIC
2	0	0	1	1	69325	WUTC	CHATTANOOGA	TN	LIC
1	0	0	0	1	74434	WYSU	YOUNGSTOWN	OH	LIC
<b>109</b>	<b>2</b>	<b>15</b>	<b>40</b>	<b>52</b>	TOTAL	<b>34</b>			

**APPENDIX C**

**CPB Eligible Stations  
Within 250 Meters (Near Co-location)  
Of  
Full Power or Class A TV Stations**

**CPB Eligible Full Service FM Stations Within 0.25 km of Full Service or Class A DTV Stations**

Number of DTV Stations					FM STATION				
Total	Low VHF	High VHF	UHF 14-36	UHF 38-51	Facility ID	Call	City	State	Status
3	0	1	2	0	24780	KAFM	GRAND JUNCTION	CO	LIC
1	0	1	0	0	65303	KAMU-FM	COLLEGE STATION	TX	LIC
10	0	2	6	2	4273	KANW	ALBUQUERQUE	NM	LIC
7	0	2	4	1	40096	KBAQ	PHOENIX	AZ	LIC
1	0	1	0	0	69180	KBIA	COLUMBIA	MO	LIC
1	0	0	1	0	42912	KBPR	BRAINERD	MN	LIC
8	0	4	4	0	6325	KBSU-FM	BOISE	ID	LIC
6	0	0	3	3	33705	KCBX	SAN LUIS OBISPO	CA	LIC
10	1	2	4	3	50390	KCEP	LAS VEGAS	NV	LIC
1	0	0	0	1	68938	KCHO	CHICO	CA	LIC
6	0	1	2	3	10791	KCME	MANITOU SPRINGS	CO	LIC
1	0	0	1	0	53317	KCND	BISMARCK	ND	LIC
1	0	0	1	0	14738	KCUR-FM	KANSAS CITY	MO	LIC
1	0	0	1	0	4317	KDAQ	SHREVEPORT	LA	LIC
1	0	0	0	1	17380	KDHX	ST. LOUIS	MO	LIC
1	0	0	1	0	61172	KEDT-FM	CORPUS CHRISTI	TX	LIC
1	0	0	1	0	18344	KENW-FM	PORTALES	NM	LIC
4	0	2	1	1	68668	KEXP-FM	SEATTLE	WA	LIC
1	0	0	1	0	22630	KFAI	MINNEAPOLIS	MN	LIC
4	0	1	3	0	28111	KHSU	ARCATA	CA	LIC
1	0	0	1	0	85417	KISU-FM	POCATELLO	ID	LIC
1	0	0	1	0	29126	KIWR	COUNCIL BLUFFS	IA	LIC
7	0	2	4	1	40095	KJZZ	PHOENIX	AZ	LIC
5	0	1	4	0	36522	KLCC	EUGENE	OR	LIC
1	0	0	1	0	8685	KMFA	AUSTIN	TX	LIC
1	0	0	0	1	72364	KMUW	WICHITA	KS	LIC
1	0	0	1	0	49490	KNAU	FLAGSTAFF	AZ	LIC
3	0	3	0	0	35289	KNBA	ANCHORAGE	AK	LIC
1	0	0	0	1	9977	KNCT-FM	KILLEEN	TX	LIC
10	0	3	5	2	50607	KOPB-FM	PORTLAND	OR	LIC
4	0	2	2	0	58823	KPBS-FM	SAN DIEGO	CA	LIC
12	0	2	5	5	51701	KPCC	PASADENA	CA	LIC
2	0	1	0	1	51252	KPKF	LOS ANGELES	CA	LIC
4	0	0	1	3	59343	KQAC	PORTLAND	OR	LIC
6	0	1	2	3	65563	KRCC	COLORADO SPRINGS	CO	LIC
13	0	0	6	7	37766	KRCL	SALT LAKE CITY	UT	LIC
2	0	0	2	0	173890	KRFF	FAIRBANKS	AK	LIC
5	0	1	4	0	59340	KRVM-FM	EUGENE	OR	LIC
1	0	0	1	0	66595	KRVS	LAFAYETTE	LA	LIC
4	0	1	3	0	42911	KSJN	MINNEAPOLIS	MN	LIC
3	0	3	0	0	805	KSKA	ANCHORAGE	AK	LIC
2	0	2	0	0	50622	KSOR	ASHLAND	OR	LIC
1	0	1	0	0	66626	KSUI	IOWA CITY	IA	LIC
1	0	1	0	0	69342	KTEP	EL PASO	TX	LIC
2	0	0	2	0	85347	KUAC	FAIRBANKS	AK	LIC
1	0	0	1	0	4296	KUAR	LITTLE ROCK	AR	LIC
2	1	0	1	0	3383	KUAZ-FM	TUCSON	AZ	LIC
13	0	0	6	7	69171	KUER-FM	SALT LAKE CITY	UT	LIC
2	0	0	0	2	21210	KUFW	WOODLAKE	CA	LIC
3	0	2	1	0	69150	KUHF	HOUSTON	TX	LIC
1	0	1	0	0	55571	KUMD-FM	DULUTH	MN	LIC
3	0	1	2	0	69158	KUNI	CEDAR FALLS	IA	LIC
10	0	2	6	2	6083	KUNM	ALBUQUERQUE	NM	LIC

4	0	2	1	1	66571	KUOW	SEATTLE	WA	LIC
7	0	0	4	3	69318	KUSC	LOS ANGELES	CA	LIC
1	0	0	1	0	58426	KUSD	VERMILLION	SD	LIC
1	0	1	0	0	69131	KUWR	LARAMIE	WY	LIC
2	0	0	1	1	69395	KVNO	OMAHA	NE	LIC
3	0	0	2	1	83535	KVOD	LAKEWOOD	CO	LIC
5	0	2	2	1	72188	KVPR	FRESNO	CA	LIC
4	0	2	0	2	66586	KWGS	TULSA	OK	LIC
1	0	0	1	0	65585	KWMU	ST. LOUIS	MO	LIC
8	0	1	6	1	22167	KXCI	TUCSON	AZ	LIC
1	0	0	0	1	50038	KXWT	ODESSA	TX	LIC
1	0	0	1	0	3538	WABE	ATLANTA	GA	LIC
1	0	0	1	0	70849	WAMC-FM	ALBANY	NY	LIC
1	0	0	1	0	6051	WAPS	AKRON	OH	LIC
14	0	3	7	4	51249	WBAI	NEW YORK	NY	LIC
5	1	0	1	3	66649	WBEZ	CHICAGO	IL	LIC
2	1	0	1	0	48699	WBGO	NEWARK	NJ	LIC
1	0	0	0	1	4240	WBHM	BIRMINGHAM	AL	LIC
1	0	0	0	1	18185	WBRH	BATON ROUGE	LA	LIC
3	0	0	3	0	68241	WBUR-FM	BOSTON	MA	LIC
1	0	0	0	1	6610	WCBU	PEORIA	IL	LIC
7	0	0	4	3	11675	WCLK	ATLANTA	GA	LIC
1	0	0	1	0	66284	WCNY-FM	SYRACUSE	NY	LIC
5	0	0	3	2	10016	WCVE-FM	RICHMOND	VA	LIC
2	0	0	0	2	36992	WDIY	ALLENTOWN	PA	LIC
1	0	0	0	1	4030	WDNA	MIAMI	FL	LIC
1	0	0	1	0	61582	WDPR	DAYTON	OH	LIC
1	0	0	0	1	18307	WEKU-FM	RICHMOND	KY	LIC
4	0	0	2	2	63030	WERN	MADISON	WI	LIC
2	0	1	0	1	69436	WFAE	CHARLOTTE	NC	LIC
1	0	0	1	0	68269	WFIU	BLOOMINGTON	IN	LIC
1	0	0	1	0	3249	WFMU	EAST ORANGE	NJ	LIC
1	0	0	1	0	38621	WFPK	LOUISVILLE	KY	LIC
1	0	0	0	1	21799	WFSU-FM	TALLAHASSEE	FL	LIC
2	0	0	2	0	41394	WFYI-FM	INDIANAPOLIS	IN	LIC
1	0	0	1	0	69042	WGCU-FM	FORT MYERS	FL	LIC
1	0	0	1	0	66287	WGTE-FM	TOLEDO	OH	LIC
2	0	0	2	0	6126	WGUC	CINCINNATI	OH	LIC
3	0	0	1	2	22656	WHQR	WILMINGTON	NC	LIC
5	0	1	2	2	25933	WHRV	NORFOLK	VA	LIC
6	1	1	2	2	72336	WHYY-FM	PHILADELPHIA	PA	LIC
1	0	1	0	0	68940	WILL-FM	URBANA	IL	LIC
3	0	0	1	2	53860	WIPR-FM	SAN JUAN	PR	LIC
2	0	0	2	0	73084	WITF-FM	HARRISBURG	PA	LIC
4	0	2	2	0	73125	WJCT-FM	JACKSONVILLE	FL	LIC
2	0	0	2	0	23927	WJSP-FM	WARM SPRINGS	GA	LIC
1	0	0	0	1	41683	WKAR-FM	EAST LANSING	MI	LIC
1	0	0	1	0	41887	WKNO-FM	MEMPHIS	TN	LIC
1	0	0	0	1	34045	WKSU-FM	KENT	OH	LIC
1	0	0	0	1	71856	WKYU-FM	BOWLING GREEN	KY	LIC
1	0	0	1	0	719	WLRH	HUNTSVILLE	AL	LIC
1	0	0	1	0	66339	WLRN-FM	MIAMI	FL	LIC
2	0	0	1	1	4327	WLSU	LA CROSSE	WI	LIC
1	0	0	1	0	60984	WLTR	COLUMBIA	SC	LIC
1	0	0	0	1	39655	WMEA	PORTLAND	ME	LIC
1	0	0	1	0	12857	WMFE-FM	ORLANDO	FL	LIC
6	1	2	2	1	73266	WMHT-FM	SCHENECTADY	NY	LIC
1	0	0	1	0	43765	WMKY	MOREHEAD	KY	LIC

5	0	1	3	1	47459	WMNF	TAMPA	FL	LIC
1	0	0	1	0	46682	WMPN-FM	JACKSON	MS	LIC
1	0	1	0	0	67801	WNIN-FM	EVANSVILLE	IN	LIC
1	0	1	0	0	49572	WNMU-FM	MARQUETTE	MI	LIC
2	0	1	0	1	8710	WNRN	CHARLOTTESVILLE	VA	LIC
14	0	3	7	4	73355	WNYC-FM	NEW YORK	NY	LIC
3	1	2	0	0	29118	WOI-FM	AMES	IA	LIC
2	0	0	2	0	3596	WORT	MADISON	WI	LIC
1	0	0	1	0	50149	WOUB-FM	ATHENS	OH	LIC
7	0	1	3	3	54002	WQED-FM	PITTSBURGH	PA	LIC
1	0	0	0	1	53720	WQLN-FM	ERIE	PA	LIC
3	0	0	1	2	6056	WRCJ-FM	DETROIT	MI	LIC
1	0	0	1	0	53834	WRKF	BATON ROUGE	LA	LIC
11	1	0	9	1	65190	WRTI	PHILADELPHIA	PA	LIC
1	0	0	0	1	58660	WSCL	SALISBURY	MD	LIC
1	0	0	0	1	58515	WSHU-FM	FAIRFIELD	CT	LIC
3	0	0	2	1	74039	WSKG-FM	BINGHAMTON	NY	LIC
1	0	1	0	0	23926	WSVH	SAVANNAH	GA	LIC
2	0	1	0	1	69145	WTJU	CHARLOTTESVILLE	VA	LIC
1	0	0	0	1	67461	WTMD	TOWSON	MD	LIC
1	0	0	1	0	66604	WUFT-FM	GAINESVILLE	FL	LIC
1	0	0	0	1	4303	WUKY	LEXINGTON	KY	LIC
1	0	0	1	0	66581	WUNC	CHAPEL HILL	NC	LIC
2	0	0	2	0	69161	WUOT	KNOXVILLE	TN	LIC
4	0	1	2	1	69122	WUSF	TAMPA	FL	LIC
2	0	0	1	1	69325	WUTC	CHATTANOOGA	TN	LIC
1	0	0	0	1	66570	WUWF	PENSACOLA	FL	LIC
1	0	0	1	0	4285	WUWM	MILWAUKEE	WI	LIC
5	0	2	0	3	49436	WVIA-FM	SCRANTON	PA	LIC
1	1	0	0	0	3242	WVIK	ROCK ISLAND	IL	LIC
1	0	1	0	0	52866	WVLS	MONTEREY	VA	LIC
1	0	1	0	0	71689	WVPB	BECKLEY	WV	LIC
1	0	0	1	0	19365	WVPE	ELKHART	IN	LIC
5	0	1	3	1	69952	WVPS	BURLINGTON	VT	LIC
1	0	0	1	0	70241	WVUB	VINCENNES	IN	LIC
3	0	0	2	1	38607	WWNO	NEW ORLEANS	LA	LIC
2	0	0	1	1	68229	WXPN	PHILADELPHIA	PA	LIC
1	0	0	1	0	72220	WXPR	RHINELANDER	WI	LIC
5	0	2	2	1	74218	WXXI-FM	ROCHESTER	NY	LIC
1	0	0	1	0	42669	WYMS	MILWAUKEE	WI	LIC
1	0	0	0	1	74434	WYSU	YOUNGSTOWN	OH	LIC

445

9

86

222

128

152

**APPENDIX D**

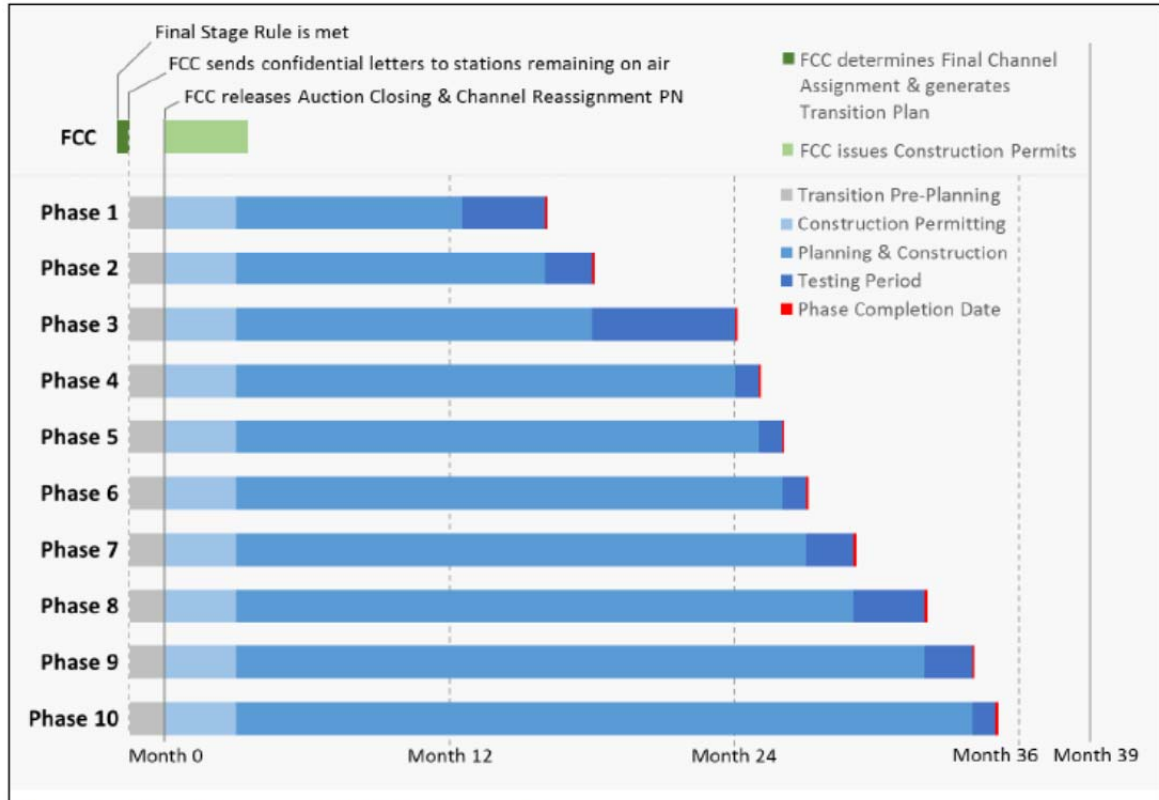
**PROPOSED DTV REPACK PHASED  
CONSTRUCTION CONCEPT**



**84 MHz Scenario A**

	Phase Number									
	1	2	3	4	5	6	7	8	9	10
Average number of weeks from Phase Start to Phase Completion Date	69	76	104	108	112	118	125	139	149	153

*Table 9: Number of weeks from the start of a phase to the phase completion date*



*Figure 7: Phase Timelines at 84 MHz Scenario A*