



ILC Audio/Video Systems Upgrades

February 2020

Goals of this Effort

- Comply with [FCC rules](#) regarding the use of wireless microphones that needs to be implemented by **July 13, 2020** & avoid fines.
- Changing out the wireless microphones is an opportunity to **replace antiquated equipment** & position ILC for the next couple decades.
- Stage the upgrades in such a way to **efficiently use funds**.
- Provide a **better worship experience** for
 - **Shut-ins** who would like to see service live,
 - Parishioners who use the **Chapel**,
 - Parishioners who are **hearing impaired**,
 - The **Contemporary** service in the Parish Hall.
- Enhance opportunities to use spaces for **activities other than worship**, such as youth movie nights, community rentals, etc.
- **Ease support** for Worship Assistants & make it **easier to adjust configuration** as needed in all spaces.

Why Upgrade A/V System in Sanctuary

1. The existing wireless microphones use a frequency band the FCC has reassigned to emergency response use only. We need to cease use of the equipment by July 2020. Failure to do so can result in a fine of up to \$5,000 per device per incident.
2. The wireless microphones (and pulpit and lectern mics) are not under the control of the current soundboard but rather through a device in the rack called an “automixer”. The automixer is so old it is no longer supported by the manufacturer & requires special software to reconfigure that can only run on Windows XP, which is also no longer supported. And it makes use of RS-232 ports which is old technology.
In short, the unit needs to be replaced when we purchase new microphones.
3. The existing system takes sound outputs from the automixer and sound board and runs them through a digital signal processor (DSP) to generate the final mix for the various destinations (sanctuary speakers, chapel, etc.) The DSP unit is no longer supported by the manufacturer, requires special software to reconfigure which also only runs on Windows XP and requires an RS-232 interface.
In short, this unit needs to be replaced when we purchase new microphones.
4. The soundboard is very old and does not have the ability to prevent channel settings from being changed. Modern soundboards have features that allow all settings to be saved in “presets” which are password protected & board settings can be returned to their preset values at the push of a single button.

Why Upgrade A/V System in Parish Hall

1. The existing wireless microphones in the Parish Hall also use the frequency band the FCC has reassigned to emergency response use only. Again, we will need to cease use by July, 2020.
2. The soundboard in the Parish Hall is the same vintage as the one in the Sanctuary and needs to be replaced for the same reasons. The recommendation is to replicate the same proposed soundboard/DSP processor being proposed for the sanctuary to minimize support/training & maximize personnel that can operate both.
3. The speaker system in the Parish Hall is a cobbled together amalgam of mis-matched and various vintage equipment. Different speaker systems are used for the pastor/assistants than the praise band. The pastor/assistant speakers are distributed speakers in the ceiling, which produce “feedback” when the pastor/assistant wireless microphones pass directly underneath one of the speakers. The speaker system should be an integrated system that provides sound coverage through the entire Parish Hall while eliminating the feedback spots. This will be similar to the experience in the Sanctuary.
4. The “sound” booth in the parish hall is a jumble of scattered audio equipment. With the addition of more wireless microphones and other audio equipment, the entire sound system except the soundboard needs to be reorganized into an equipment rack as is done in the Sanctuary. This will make it easier to maintain and protect the equipment while reducing clutter.

Why Upgrade A/V System in Chapel

1. The existing sound system in the Chapel is ancient and not well integrated with the big screen TV and AV feed coming from the Sanctuary.
2. We cannot provide a feed from the Parish Hall with the current equipment.
3. The proposal is to replace the ancient audio equipment with equipment which can be better integrated in with the TV and AV feed.

Project Plan Summary

1. Phase 1 - \$50,000

a. Start by May 1 - Complete before June 15

- 1) Lead time is 1 month to schedule & the actual work will take about 1 week
- 2) We should plan to hold both services the following Sunday in the Parish Hall

b. Work includes:

- 1) **Sanctuary Audio** Upgrade (\$35k)
- 2) **Chapel Audio/Video** Upgrade (\$5k)
- 3) **Parish Hall** upgrade of **Wireless Microphones** (\$10k)

Project Plan Summary (cont)

2. Phase 2 - \$75,000

- a. Schedule & complete when funds are raised & we are satisfied with Phase 1
 - 1) Lead time is 1 month to schedule & the actual work will take about 1 week
 - 2) We should plan to hold both services the following Sunday in the Sanctuary
- b. Work includes Parish Hall Audio & Video Upgrade

Phase 1 Benefits – Upgrade Sanctuary & Wireless

1. Replacement of wireless microphones to comply with FCC regulations that **must** be met before **July 13** or face threat of fines.
2. Modern soundboard provides preset programs to easily reset to a known configuration, access through internet for remote access, and enable the other benefits listed below.
3. WiFi hub enables authorized personnel to play audio/video from a personal device (smart phone, tablet, etc.)
4. Replace antiquated wired microphones & add congregation microphone so remote areas (such as Chapel) can hear congregation.
5. Replace piano microphone with audio transducers attached to piano to avoid damage.
6. WiFi transmitter allows broadcasts to cell phones for the hearing impaired.
7. Live streaming of services and pre-configured recording of services does not require human monitor. If configuration changes are necessary, they can be made over the internet with any web browser.
8. [tbd] Verify existing wiring to Chapel, Narthex & Parish Hall is adequate & upgrade/add if it is not

Phase 2 Benefits – Upgrade Parish Hall

1. Modern soundboard provides preset programs to easily reset to a known configuration, access through internet for remote access, and enable the other benefits listed below.
2. Identical soundboard to one in the Sanctuary makes it easier to support & train personnel to operate both systems & provides redundancy between the two systems.
3. Additional channels on soundboard provides room to grow & change for many years to come.
4. Integrated “center line” speaker system for improved sound & no feedback.
5. Additional microphones to support current size of praise band with ability to grow & change for many years.
6. Ability to support projection to multiple screens & flexibility to add more screens if desired.
7. Replace 4:3 screen with 2 – 16:9 screens on either side of altar to improve visibility.
8. Add confidence monitor in back of room so pastor, band members, etc. can follow service.
9. WiFi hub to allow authorized personnel to play audio/video from a personal device (smart phone, tablet, etc.)
10. WiFi transmitter to allow broadcasts to cell phones to aid the hearing impaired.
11. Live streaming of services and pre-configured recording of services does not require human monitor. If configuration changes are necessary, they can be made over the internet with any web browser.
12. [tbd] Verify existing wiring to Chapel, Narthex & Parish Hall is adequate & upgrade/add if it is not.
13. Upgrade camera to be the same as make/model in the Sanctuary to provide better video & make it easier to support & train personnel to operate either facility.
14. Add rack mount to organize, protect & easily power equipment.



**GATHER
GROW
SERVE**