

will use the \$2500 already approved.

DMUMC Sound Improvement Proposal

Below I have detailed several improvements which I think will help us perfect the sound in the sanctuary for worship services. The projects are ordered in order of their urgency and the impact they will have for those in the worship service. Many of the items are hyperlinked to reputable retailers online from which we can buy the items.

I recommend the work of Egan O'Rourke to lead in much of the installation and configuration of this equipment. Egan has had a great deal of experience in configuring such equipment, and worked for DMUMC last year in our initial improvements, which received many compliments. The estimates also include time which he has given us in consultation deciding what to pursue.

Please forward any of your questions to baw12@duke.edu. Thank you, Benjamin Wolf

Amplifier Installation

Installing an additional amplifier will allow us to separate the feeds for the speakers above and below the balcony. This will allow for more precise sound configuration, improving clarity, especially for those underneath the balcony.

Item	Note	Price
QSC RMX 850 amplifier	This is the same model as our existing equipment. (includes \$27 sales tax)	\$426.99
2" XLR Jumper Cable	To connect the new amplifier (aprox)	\$15
Installation and Configuration	½ day, Egan O'Rourke	\$125
<i>Total For Amplifier Installation</i>		\$566.99

Sound Meter

One of the areas of complication that I have run into when discussing running the sound on Sunday mornings with other volunteers is the challenge of keeping the sound consistent. We all have different perceptions of what is "too" loud. To provide a quantitative measure that will help us provide a consistent volume output from week to week, I suggest adding a sound meter.

Item	Note	Price
Pyle-Pro PDBC60 DB Meter and Power Supply	Also includes a built-in power strip	\$57.66
Cabling	¼" to RCA	\$4.95
Installation and Balancing	2 hours, Egan O'Rourke	\$50
<i>Total for Sound Meter</i>		\$112.61

Pulpit Microphone

One of the areas from which we seem to be getting the most echo and lack of clarity is from the pulpit. By adding a long microphone, we will be able to have the microphone both closer and aimed better towards the speaker/lector at the pulpit. The extra length is needed both because of the relatively short pulpit and the fact that the mount is on the side and not on the center.

Item	Note	Price
<u>Earthworks FMR720, Cardioid</u>	27" long, flex on either end, rigid in middle	\$559
<u>Earthworks PMM1 Podium Mount</u>	Required for installation	\$99
Installation	1 hour, Egan O'Rourke	\$25
<i>Total for new Pulpit Mic</i>		\$683

Replacement/Additional Lavalier Microphone

The new lavalier microphone used with the new wireless system we have picks up too much ambient noise (it is omnidirectional). To produce a clearer signal that can be amplified sufficiently, I recommend a cardioid microphone.

Item	Note	Price
<u>Shure MX 185 Cardioid</u>	Includes windscreen and clip	\$169.99

Post Installation Survey and Fine-Tuning

I think that having Egan join us for a Sunday morning worship to both confirm optimal configuration and answer any questions would be helpful. While the system can be configured on a weekday, it would be best to fine-tune it based on an actual service. This would also be a time to get all of the sound volunteers on the same page with the upgrades.

Item	Note	Price
Sunday Morning Observation, Adjustment, and Consultation	3 hours, Egan O'Rourke	\$75

Totals

Project	Total
Amplifier Installation	\$566.99
Sound Meter	\$112.61
Pulpit Microphone	\$683
Replacement for Lavalier	\$169.99
Sunday Morning Review	\$75
<i>Total</i>	<i>\$1607.59</i>