

St. John Vianney Northlake, IL

1908 Hann-Wangerin-Weickhardt
Proposal for Refurbishment & Modernization



Prepared by Fries Keyboard Works, LLC
Wood Dale, IL

Dear St. John Vianney Parish,

Thank you for considering this project to refurbish and modernize the Hann-Wangerin-Weickhardt (HWW) pipe organ in the church. The first three pages of this booklet will outline “at-a-glance” the costs and scope of the proposed project. Following that will be a much more detailed explanation of work to be done.

Fries Keyboard Works LLC (FKW LLC) was founded in 2019 by Alex Fries, after spending several years studying the mechanics of pipe organs and pianos. FKW LLC is fully insured and a certificate of insurance is available upon request. Alex mostly works solo, but occasionally contracts additional help when needed. Outside of piano and organ work, Alex is Director of Music at St. Raphael the Archangel Catholic Church in Old Mill Creek, IL, and also plays regularly at St. John’s, in addition to several other parishes throughout Chicago.

The condition and history of the organ:

The HWW organ was originally installed (1908) in the long closed (1990) St. Boniface Catholic Church near downtown Chicago. It was moved to St. John’s after the closure. During the move, some items were addressed such as the creation of a few windchests, and minor repairs to pipes, as well as the addition of some basic electronics and new wiring. However most of the organ was left in the condition it was found. Previous restoration work on this organ dates back to the 1970’s, when many of the chests were re-leathered. The console and other mechanics were updated sometime between the 1930’s and 1950’s. The organ was likely originally “tubular pneumatic” (TP), meaning it was completely powered by air, rather than having electric controls. This design of organ quickly fell out of favor once electricity had been mastered in organbuilding. Very few remain, and for good reason. FKW maintains a TP organ in the city, and it is a constant chore!

The last major upgrades of the mid-20th century are now nearing the end of their useful lives. The mechanical components within the console are failing, and are not repairable. The leathers in the pipes, chests, and especially primaries are drying out, cracking, leaking, and failing in other ways. This proposal aims to address these issues and many others, and give some sense of priority and urgency to what is needed. Terms that may be unfamiliar to you will be explained throughout the proposal.

Thank you for considering this project. Do not hesitate to contact me to address any questions.

Alex Fries

Fries Keyboard Works, LLC

At-A-Glance Proposal for Organ Refurbishment & Modernization 1908 Hann-Wangerin-Weickhardt St. John Vianney, Northlake

This project would be broken into three main phases. The organ will be usable throughout the entire project, although at some points not all of the instrument will be available for use.

Phase 1: Console (2-3 months time from arrival of new equipment.)

The console will be upgraded (not replaced by a new console) with modern electronic, solid-state control equipment. Currently, the organ is controlled by 1950's era mechanical and electrical devices that are failing and are beyond their useful lives. This upgrade will include, but not limited to the following major features and upgrades:

- New, OPUS-2 computerized control system
- Addition of more preset pistons and other keyboard controls
- New and additional toe pistons and updated foot controls
- Refurbished pedalboard
- Refurbished keyboards
- New stoptab magnets and engraved stoptabs
- New digital and physical control panels
- Upgraded wiring in console and to/from/in chambers.
- New console microphone (for singing)
- (Optional) New music rest and console lights (cost included already in estimate)
- (Optional) New keyboard tops (cost unknown at this time)
- (Optional) High performance computer and audio system for digital augmentation of the instrument and silent practice use of the console. (Cost unknown at this time)

The instrument will need to go through 1-2 weeks of downtime during this upgrade. The console will remain in the choir loft throughout the upgrade, however certain components will be removed to the shop for modification. No refinishing will be done to the console. It will be cleaned and polished. In the meantime, a temporary keyboard will be set up, enough to control the GREAT and perhaps PEDAL division, so as to provide temporary use of the instrument. Should this not be possible or practical, a digital instrument will be set up instead.

Phase 2: Divisions (1-2 years time from beginning of phase 2.)

Phase 2 will be broken up into 4 different sub-phases. Each phase will deal with a different division of the organ. This organ has 4 divisions: GREAT, SWELL, CHOIR, PEDAL. During this work, the division currently undergoing the work will be disabled, but the rest of the organ will remain available to the organist, with exceptions. Some ranks may be removed to be sent to a third party for repairs. An average of 1.5 weeks per rank is used to calculate the time needed to complete phase 2. It may take more or less time depending on many circumstances. The low overall price of the project reflects the longer time needed for its completion.

Work to be done to each division is on an as-needed basis, and will include, but not limited to the following:

- Pipe cleaning (all pipes) - There are 2,018 currently in this organ!
- Re-leather wooden stoppers (all pipes)
- Repair or replace wooden slides (all pipes)
- New, flared metal tuning sleeves (all pipes)
- Repairs, length adjustments, voicing corrections (as needed)
 - The Oboe, Clarinet, Trumpet, and any other damaged pipes will be sent out for complete overhaul.
- Refurbish primary and stop actions (important - currently the source of many problems)
- Replace magnets (as needed)
- Wind leak mitigation (as needed)
- Rackboard and other wood repairs (as needed)
- General chamber cleaning
- Re-leather chest valves (optional or if deemed necessary upon inspection – the last re-leathering was in the 1970's and is likely now approaching end of life. This can be done at a later time should funding be an issue.)
- (Optional) Addition of 16' Reed and Chimes in CHOIR (chests exist for 16' – no pipes)

Phase 3: Facade and Case:

Phase three is an optional phase. This phase will explore the idea of constructing a new (or obtaining and installing vintage if a matching set can be found) wooden casework and pipe facade to enclose the exposed pipes of the GREAT and PEDAL divisions. Currently there are 12 16' pipes that are in storage, installed with this organ in its original home. These would be incorporated into the facade, with the remaining pipes being “dummy” pipes, or non-speaking.

This phase would also address access issues to the GREAT and PEDAL divisions. They are both difficult to safely and efficiently access, and the addition of ladders, platforms, and/or catwalks would be very beneficial for future maintenance. These would be obscured by the construction of a case and facade. While these ideally would be installed during phase 2, their appearance would be unsightly.

Detailed Proposal For Organ Refurbishment And Modernization

1908 Hann-Wangerin-Weickhardt

St. John Vianney, Northlake

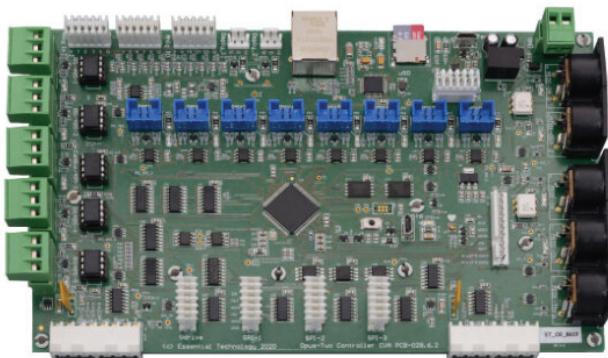
Having read the proposal at-a-glance, this section should shed light on the various aspects of the proposal. The details will be explained as much as possible to demonstrate why such a project is expensive and time-consuming.

Phase One: Console

The console, or the “brains” of the organ, is where the organ is “played” and “controlled”. It is in need of an overhaul of its internal mechanisms. This console, probably made by the Reuter company for H.B. Harrison in the 1950’s, has a number of electro-mechanical devices inside that are failing. Mainly, these failures are in what is called the combination action, which barely functions. The



combination actions allows an organist to “save” different combinations of “ranks” (sets of pipes, or different “sounds”) for quick recall while playing. Before combination actions, an organist must manually enable or disable every rank, or have someone do it for him. Think of this as the “memory” of the console. Before computers, these were done mechanically. These complicated, archaic devices will be replaced with modern electronic, computerized controls. The system to be used is called “Opus 2”.



#1 Example of an Opus-Two Computer

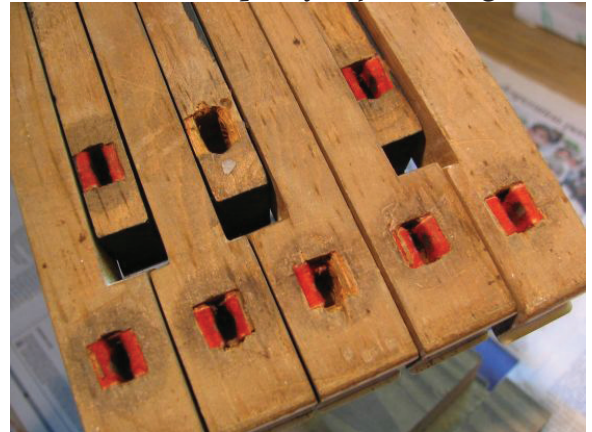
This computerized system will allow for essentially unlimited possibilities in terms of control of the instrument. It will be able to contain hundreds, if not thousands, of presets and other settings saved by any number of organist profiles, will be able to record and playback, and have MIDI output for use in a digital virtual organ system, like Hauptwerk or Grandorgue, among others.

The upgrading of the console is probably the most critical aspect of this project. While the organ itself has several deficiencies outside of the console, the most frustrating issues for the organist originate at the console. **Please see page 15 for stoplists.**

Below is a list of the known work to be completed to the console. While most of this work is required, there are some options to upgrade. There may be other issues that come up during the modernization. These items are numbered for later reference to photos, but will not necessarily be done in this order.

1. Remove all old mechanical relays and combination actions, and replace with new Opus Two solid state computer system.
2. Refurbish pedalboard, by cleaning, making repairs, re-leathering key bushings, replacing worn naturals (the “white” keys) (optional), rewiring, and other necessary work.
3. Refurbish the 3 keyboards, by re-bushing keys, cleaning, making necessary repairs, adding new electronic contacts (Any old hardware needed to maintain nominal operation of the keyboards will be retained, though they may not be used to control the organ.) Re-bushing keys fixes lateral wobble.
4. Install SAMS (Stop Action MagnetS) for all stop tabs, along with newly engraved stop tabs themselves. The stop tabs are currently part of the old mechanical system and cannot be reused.
5. Install Thumb and Toe Pistons as decided upon by organist and builder. Currently there are only 6 plus a Cancel). Please see the “stoplist” for a proposed list of pistons.

2. Example of key bushings.



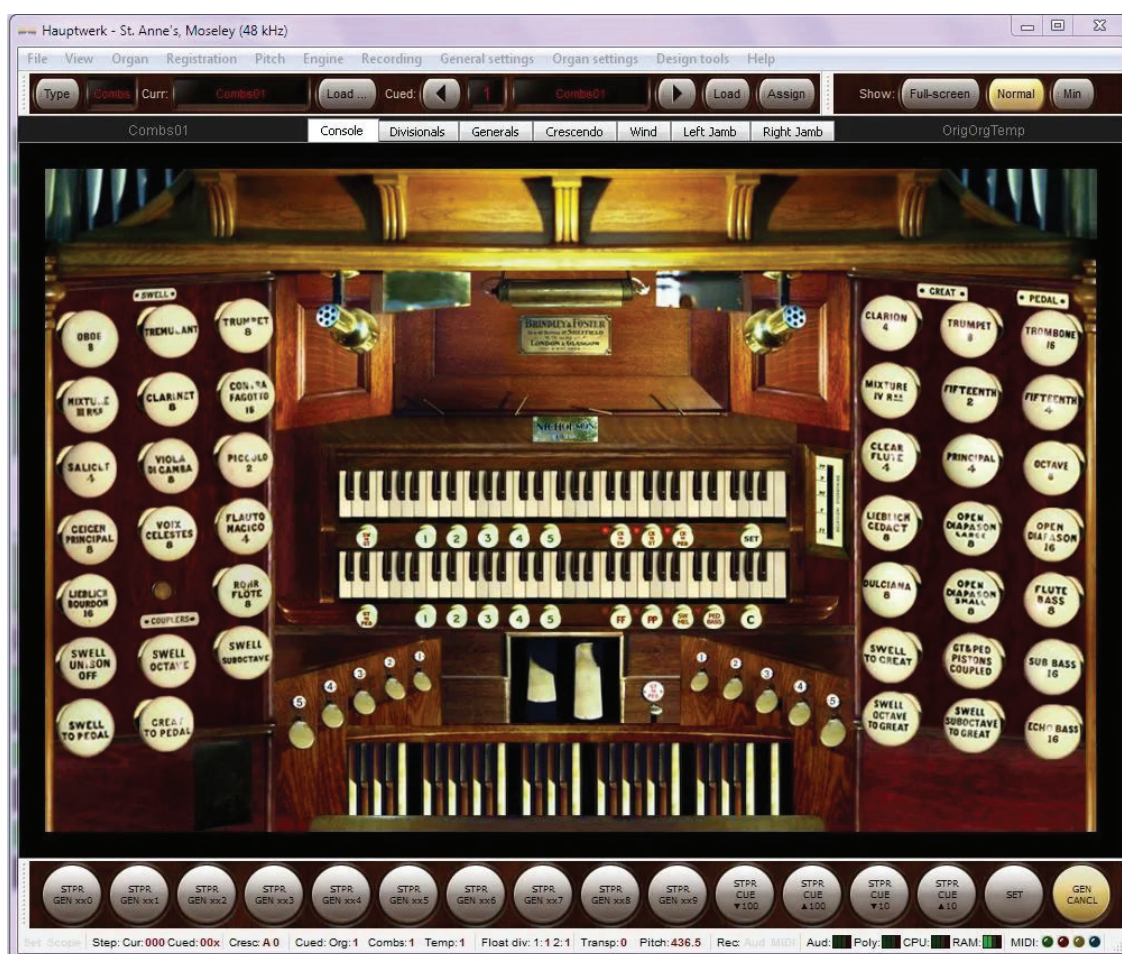
4. Example of current stop tabs to be replaced.



1. A look at the current mechanical combination action. An early “computer”.

6. Install any necessary digital screens, switches, and other auxiliary buttons on the console
7. Install new swell and crescendo shoes if necessary, or rebuild current ones with updated electronics.
8. (Optional) Install new console music rest, keyboard, and pedalboard lights.
9. (Optional) Install a larger gooseneck microphone for the organist to speak/sing.
10. (Optional) install brand new keyboards with modern plastic, wood, or bone keytops, or have current ones resurfaced.
11. (Optional) Install Virtual Organ computer system for “silent” practice use. The purpose of this system would solely be for the organist to practice at the console, wearing a pair of headphones, without the actual organ making any sound. This would be useful when other things are going on in the church but the organist needs to practice. The console will be prepared for expansion to this option regardless. This may take the form of a high-performance PC, or a dedicated MIDI controller. The PC will be a far more flexible option, and could even allow for the virtual playing of this organ instead of generic organ sounds.

This option could also allow for hybrid digital/acoustic capabilities for the instrument, although at additional costs.



11. An example of the “Hauptwerk” digital organ program.

Phase 2: Divisions (1-2 years time from beginning of phase 2.)

(From the at-a-glance proposal)

Phase 2 will be broken up into 4 different sub-phases. Each phase will deal with a different division of the organ. This organ has 4 divisions: GREAT, SWELL, CHOIR, PEDAL. During this work, the division currently undergoing the work will be disabled, but the rest of the organ will remain available to the organist, with exceptions. Some ranks may be removed to be sent to a third party for repairs. An average of 1.5 weeks per rank is used to calculate the time needed to complete phase 2. It may take more or less time depending on many circumstances. The low overall price of the project reflects the longer time needed for its completion.

There is a lot of different kind of work involved in this phase of the project. Even things as simple sounding as cleaning must be done with great care. This phase of the project will expose many parts of the organ not normally accessible to the technician. This gives an excellent opportunity to fix many lingering issues or get ahead of issues by doing preventative maintenance.

One example of this preventative maintenance is what is commonly referred to as “re-leathering of the chests”. This means that all of the felt and leather valves inside the chest, which control the airflow to the pipe, get replaced, and any other gasketing also can be replaced at this time. These chests were last re-leathered in the 1970’s. 50 years is generally the lifespan of these leathers. When the chests are depopulated of pipes, it will be a good time to inspect the valves and decide whether or not re-leathering is necessary. The re-leathering can be done at a later date if additional funding is not available.



7. This is a detail from the Swell primary. The wires come directly from the console, which control whether or not these valves open. Below is the stop action, which controls which sets of pipes (ranks) will play when the primary valve is opened.

These components are original and show a lot of wear and tear, which makes them a source of many problems.



Work to be done to each division is on an as-needed basis, and will include, but not limited to the following:

1. Pipe cleaning (all pipes) - There are approximately 2,000 currently in this organ! Recent sanding of church pews left a lot of sawdust on the organ. Dust is especially troublesome for reed pipes.
2. Re-leather wooden stoppers (all wood pipes)
3. Repair or replace wooden slides (Some PEDAL pipes)
4. New, flared metal tuning sleeves (all metal pipes currently with slides)
5. Repairs, length adjustments, voicing corrections (as needed)
6. The Oboe, Clarinet, Trumpet, and any other damaged pipes will be sent out for complete overhaul.
7. Refurbish primary and stop actions (important - currently the source of many problems)
8. Replace magnets and dead notes (as needed)
9. Wind leak mitigation (as needed)
10. Rackboard and other wood repairs (as needed)
11. General chamber cleaning
12. Re-leather chest valves (optional or if deemed necessary upon inspection – the last re-leathering was in the 1970's and is likely now approaching end of life. This can be done at a later time should funding be an issue.)
13. (Optional) Addition of 16' Reed and Chimes in CHOIR (chests exist already for 16' reed)



9. (left) This windline is being held in place by a rope, and it still leaks a lot of wind.

6 & 11. (above) This is a section of the Oboe rank in the SWELL. These “scrolls” were cut into the bells at some point in its history. They should not be there, or at the very least be repaired and made correctly, instead of hastily cut. You can also see the thick layer of dust covering pipes and wood.

Work to be done specifically to each division, will include, but not limited to the following:

GREAT

- Safety and access modifications like expanded tuning platforms, handles, etc.
- Add tremolo.

SWELL

- Reinforce walkboard, add access walkboard over north chest.
- Fix and/or change direction of shades (louvers). Currently they open toward the wall and not out into the church. Also the linkage is improperly designed and makes a lot of noise.
- If possible, make access to tuning low pedal notes possible from the chamber.
- Relocate windline that blocks ladder access.

CHOIR

- Add access walkboard over chest to prevent further damage to racking and pipes.
- Replace dead shade opener (opens shades on organ power down).

PEDAL

- Safety and access modifications like expanded tuning platforms, handles, etc.
- Secure primary tubing.



(above) Some racking has been added to secure falling pipes. These would be remade stronger during renovations.

(left) Much of the Pedal division is difficult if not impossible to access for tuning and regular maintenance.

Prerequisite Work

Several items must be addressed by the parish prior to execution of any work. They are:

- Permanently closing the central air outlet vent(s) in the choir loft, which are directly under the organ chests. Especially in the winter, these vents pump tons of hot air directly onto the organ, which sends the tuning haywire in an instant. These vents are not necessary to maintain the temperature in the loft. If these vents can be closed off somewhere nearer the central air blower, that would be best.



- Locating or fabricating, and reinstalling the doors to the Swell and Choir chamber. These doors have long been removed, presumably to aid in maintaining stable temperatures throughout the organ, but also because they could not be opened or closed in their original design, because the new organ installation was lower than the doorway. However, the shades in the upper chambers provide plenty of opening for air to flow. The open doorways also mitigate the effects of the shade operation. For example, when the shades are closed, the pipes in those chambers should be quite soft in volume. With the open doorways, they only have limited effect. These are special, narrow doors. Closing these doors (with locks) will also keep secure these chambers from tampering or being used for storage.



- Keeping closed the ceiling access hatch in the Choir chamber. This hatch is a heavy door, but it causes unnecessary drafts to and from the chamber, often making the Choir chamber colder than other divisions of the organ. Perhaps this door can be modified to be more easy to open and close, or replaced altogether to encourage its closure unless needed.
- Addition of a separate electrical circuit to the pipe organ console, which will isolate the organ from the sound system. Additional electrical may be needed for chamber lighting and electronic equipment.

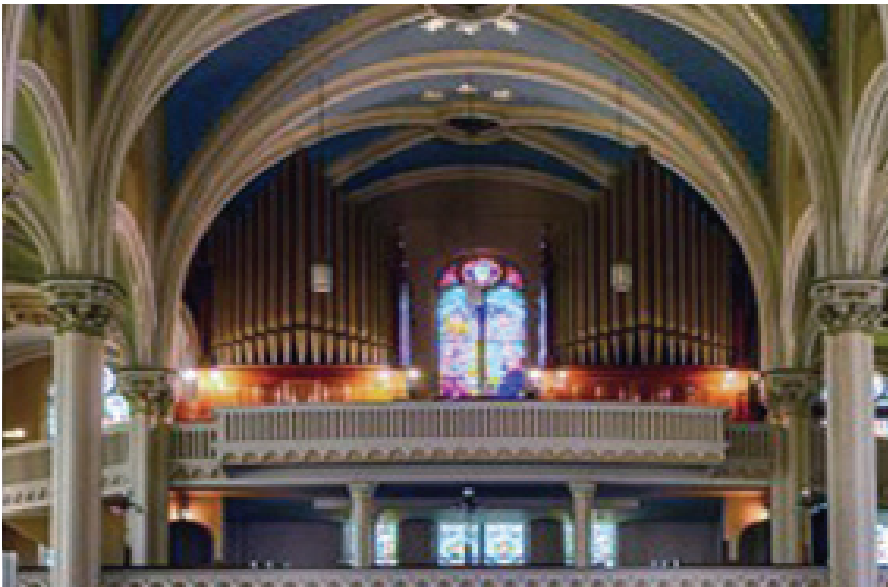
Phase 3: Facade and Case:

(From the at-a-glance proposal)

Phase three is an optional phase. This phase will explore the idea of constructing a new (or obtaining and installing vintage if a matching set can be found) wooden casework and pipe facade to enclose the exposed pipes of the GREAT and PEDAL divisions. Currently there are 12 16' pipes that are in storage, installed with this organ in its original home. These would be incorporated into the facade, with the remaining pipes being “dummy” pipes, or non-speaking. The current set of 12 gold pipes in the loft would be incorporated into such a facade.

This phase would also address access issues to the GREAT and PEDAL divisions. They are both difficult to safely and efficiently access, and the addition of ladders, platforms, and/or catwalks would be very beneficial for future maintenance. These would be obscured by the construction of a case and facade. While these ideally would be installed during phase 2, their appearance would be unsightly.

There are many churches closing these days, and many with large organs. It should be relatively easy to locate a donor facade that would be suitable to St. John's.



(above) St. Michael's in Old Town, Chicago. This is an example of what enclosing both sides of the organ could look like.

(left) The current “facade” pipes from the original organ.



Additional Photographs:



(above) Damaged pipes, rackboards, and other poor repairs (duct tape!)

(below left) Messy wiring to be replaced and cleaned up.

(below right) Damaged and poorly repaired stop action.



St. John Vianney – Hann-Wangerin-Weickhardt – **Original**

GREAT

16 Open Diapason
8 Open Diapason
8 Doppelfloete
8 Viola
4 Octave
4 Rohr Flute
2-2/3 Twelfth
2 Fifteenth
Mixture III
8 Trumpet
Gt to Gt 16, 4
Sw to Gt 16, 8, 4
Ch to Gt 16, 8, 4

SWELL (enclosed)

16 Bourdon
8 Open Diapason
8 Stopped Diapason
8 Salicional
8 Voix Celeste
8 Aeoline
4 Flute Harmonique
Dolce Mixture III
8 Oboe
Tremolo
Sw to Sw 16, 4

Expression Pedal

CHOIR (enclosed)

8 Geigen Principal
8 Melodia
8 Dulciana
8 Unda Maris
4 Fugara
4 Flute d'Amour
8 Clarinet
Tremolo
Ch to Ch 16, 4
Sw to Ch 16, 8, 4

Expression Pedal

PEDAL

16 Open Diapason
16 Bourdon
16 Violone
10-2/3 Quint
8 Octave
8 Broudon
8 Cello
8 Flauto Dolce
5-1/3 Twelfth
4 Choral Bass
Gt to Pd 8, 4
Sw to Pd 8, 4
Ch to Pd 8, 4

Crescendo Pedal
Sforzando Toe Stud
6 General Pistons
1 General Cancel

(above) The original stoplist as installed in St. Boniface. The red colored stops are not installed in the current organ.

(below) The current stoplist. The red colored stops are changes from the original. Some stops were removed.

St. John Vianney – Hann-Wangerin-Weickhardt - **CURRENT**

GREAT

8 Open Diapason
8 Doppelfloete
8 Viola
4 Octave
4 Rohr Flute
2-2/3 Twelfth
2 Fifteenth
Mixture III
8 Trumpet
Gt to Gt 16, 4
Sw to Gt 16, 8, 4
Ch to Gt 16, 8, 4

SWELL (enclosed)

16 Bourdon
8 Open Diapason
8 Stopped Diapason
8 Salicional
8 Voix Celeste
4 Flute Harmonique
Dolce Mixture III
Sesquialtera II
8 Oboe
Tremolo
Sw to Sw 16, 4

Expression Pedal

CHOIR (enclosed)

8 Geigen Principal
8 Melodia
8 Dulciana
8 Unda Maris
4 Fugara
4 Flute d'Amour
8 Clarinet
Tremolo
Ch to Ch 16, 4
Sw to Ch 16, 8, 4

Expression Pedal

PEDAL

16 Open Diapason
16 Bourdon
16 Violone
16 Gedekt (Ch)
10-2/3 Quint
8 Octave
8 Broudon
8 Cello
8 Flauto Dolce (Ch)
4 Choral Bass (Ch)
Gt to Pd 8, 4
Sw to Pd 8, 4
Ch to Pd 8, 4

Crescendo Pedal
Sforzando Toe Stud
6 General Pistons
1 General Cancel

**St. John Vianney
HWW
proposed
stoplist**

GREAT (Exposed)

16 Open Diapason
8 Open Diapason
8 Doppelfloete
8 Viola
4 Octave
4 Rohr Flute
2-2/3 Twelfth
2 Fifteenth
Mixture III
8 Trumpet
Chimes (CH)
Tremolo
Gt to Gt 16, 4
Gt Unison Off
Sw to Gt 16, 8, 4
Ch to Gt 16, 8, 4
MIDI on/off

SWELL (Enclosed)

16 Bourdon
8 Open Diapason
8 Stopped Diapason
8 Salicional
8 Voix Celeste
4 Flute Harmonique
Dolce Mixture III
Sesquialtera II
8 Oboe
Tremolo
Sw to Sw 16, 4
Sw Unison Off
MIDI on/off

CHOIR (Enclosed)

16 Gedekt (Pd)
8 Geigen Principal
8 Melodia
8 Dulciana
8 Unda Maris
4 Fugara
4 Flute d'Amour
8 Clarinet
Chimes
Tremolo
Ch to Ch 16, 4
Ch Unison Off
Sw to Ch 16, 8, 4
MIDI on/off

Pistons, et al.

Crescendo Pedal
SW, CH Expression
Sforzando I Toe Stud (no reeds)
Sforzando II Toe Stud (with reeds)
10 General Toe Studs
1 Gt to Pd toe stud
1 Sw to Pd toe stud
1 Ch to Pd toe stud
1 Sw to Gt toe stud
1 Ch to Gt toe stud
1 32 resultant
1 16 Bombard
5 pedal presets

10 General Pistons

1 General Cancel
GT to Pd
Sw to Pd
Ch to Pd
5 Divisional Pistons each division
Sfz I & II piston
SET
Sequencer pistons?

Blower/chamber switch - use existing)
Console Only ON/OFF

PEDAL (units colored) (Exposed)

32 Resultant
16 Open Diapason
16 Bourdon
16 Violone
16 Gedekt (Ch)
10-2/3 Quint
8 Octave
8 Bourdon
8 Cello
8 Flauto Dolce (Ch)
5-1/3 Twelfth (add pipes)
16 Bombard (Ch)
4 Choral Bass (Ch)
Gt to Pd 8, 4
Sw to Pd 8, 4
Ch to Pd 8, 4
SW, GT, CH MIDI To PD
MIDI on/off

*(right)
The proposed
stoplist. Most of
the changes are
at the console,
with greatly
increased control
capabilities.*

Conclusion:

This proposal has provided a comprehensive examination of problems and solutions for the continued use of this instrument for decades to come. The cost of this work may be surprising. Organ work takes many man-hours. If you estimate 1 hour of work per pipe in the organ, you come up with about 2,000 hours of work just to restore or build an organ like this. That's almost 1 year of full-time work for one person. It would be possible to only perform minimal, maintenance-like work to keep the organ going, but in the long run it may not be cost effective.

While this proposal may seem somewhat rigid, do understand that there are many options here, and not everything has to be done at once, or some things even at all, even if it may not be ideal.

The end goal is to ensure that this organ continues to improve in functionality and reliability with each service visit, regardless of what the parish decides to invest into the instrument. This proposal should give enough information for the parish to make the best decisions on the future of this instrument. You could even think of this proposal as aggressive maintenance, rather than a "renovation" or "restoration".

Thank you for considering this project. Again, please do not hesitate to contact me with any questions or concerns.

Alex Fries

Fries Keyboard Works, LLC

