

# *Village of Carol Stream*

## **SPECIAL WORKSHOP MEETING**

**MONDAY-JUNE 19, 2017**

**6:30 P.M.**

**CAROL STREAM FIRE PROTECTION DISTRICT**

**FIRE STATION 28**

**365 KUHN ROAD**

**CAROL STREAM, ILLINOIS 60188**

**TRAINING ROOM**

### **AGENDA**

1. CALL TO ORDER
2. ATTENDANCE
3. MUNICIPAL CENTER RENOVATION PROJECT UPDATE-BOARD ROOM, DAIS AND A/V EQUIPMENT.
4. PRESENTATION - WATER RECLAMATION CENTER ANNUAL REPORT AND FINANCIAL RECONCILIATION (FY17).
5. OTHER BUSINESS
6. ADJOURNMENT



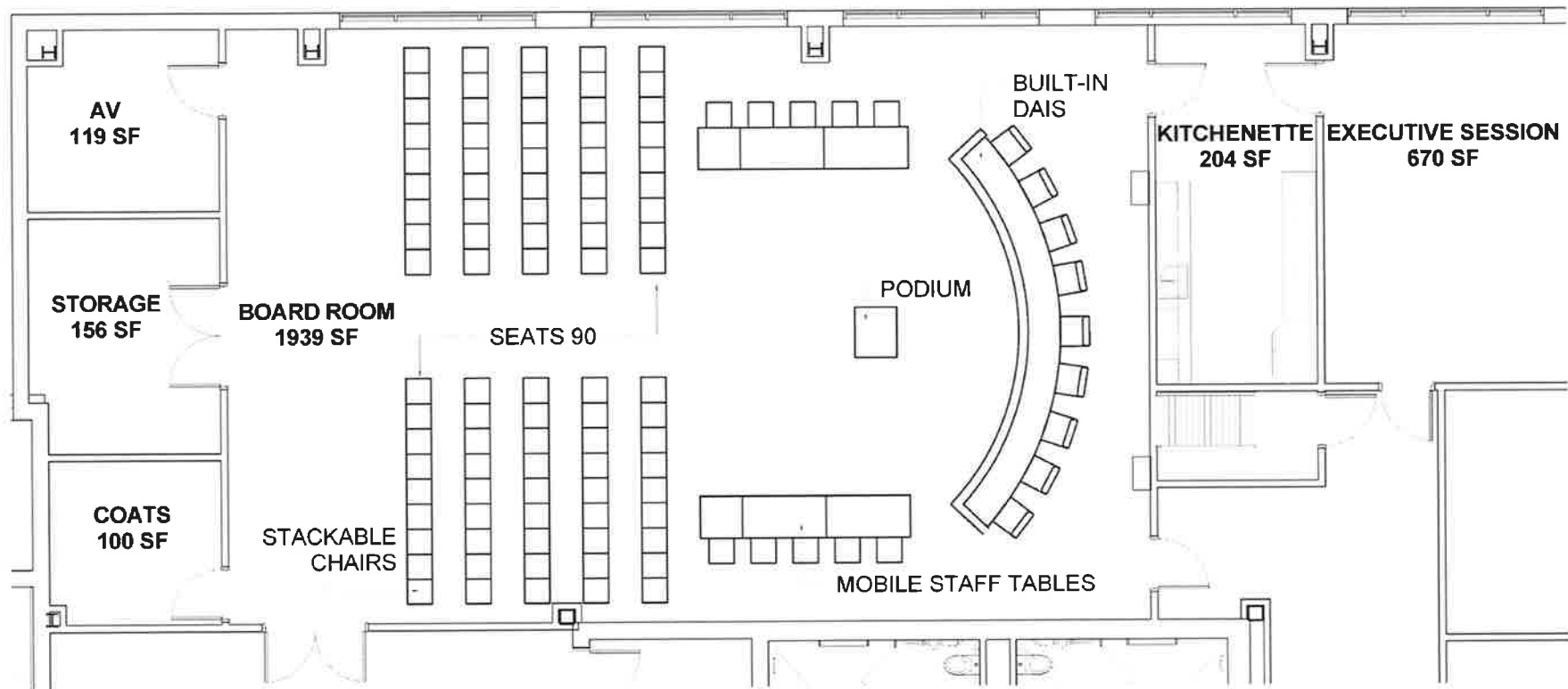
# MUNICIPAL CENTER

BOARD ROOM DAIS + A.V. EQUIPMENT



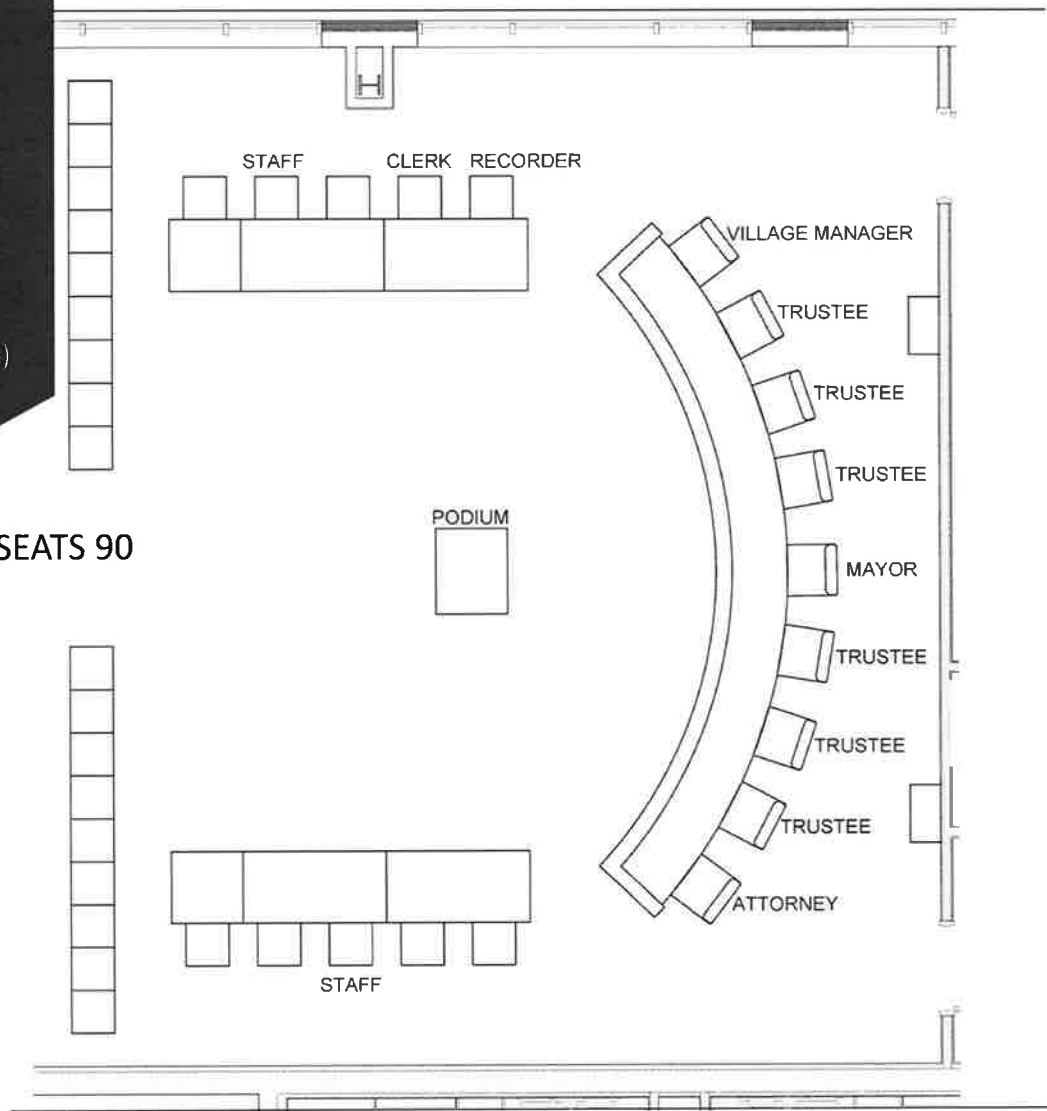
Carol  
Stream

# DAIS SEATS 9 STAFF TABLES SEAT 10 INCLUDING CLERK & RECORDER



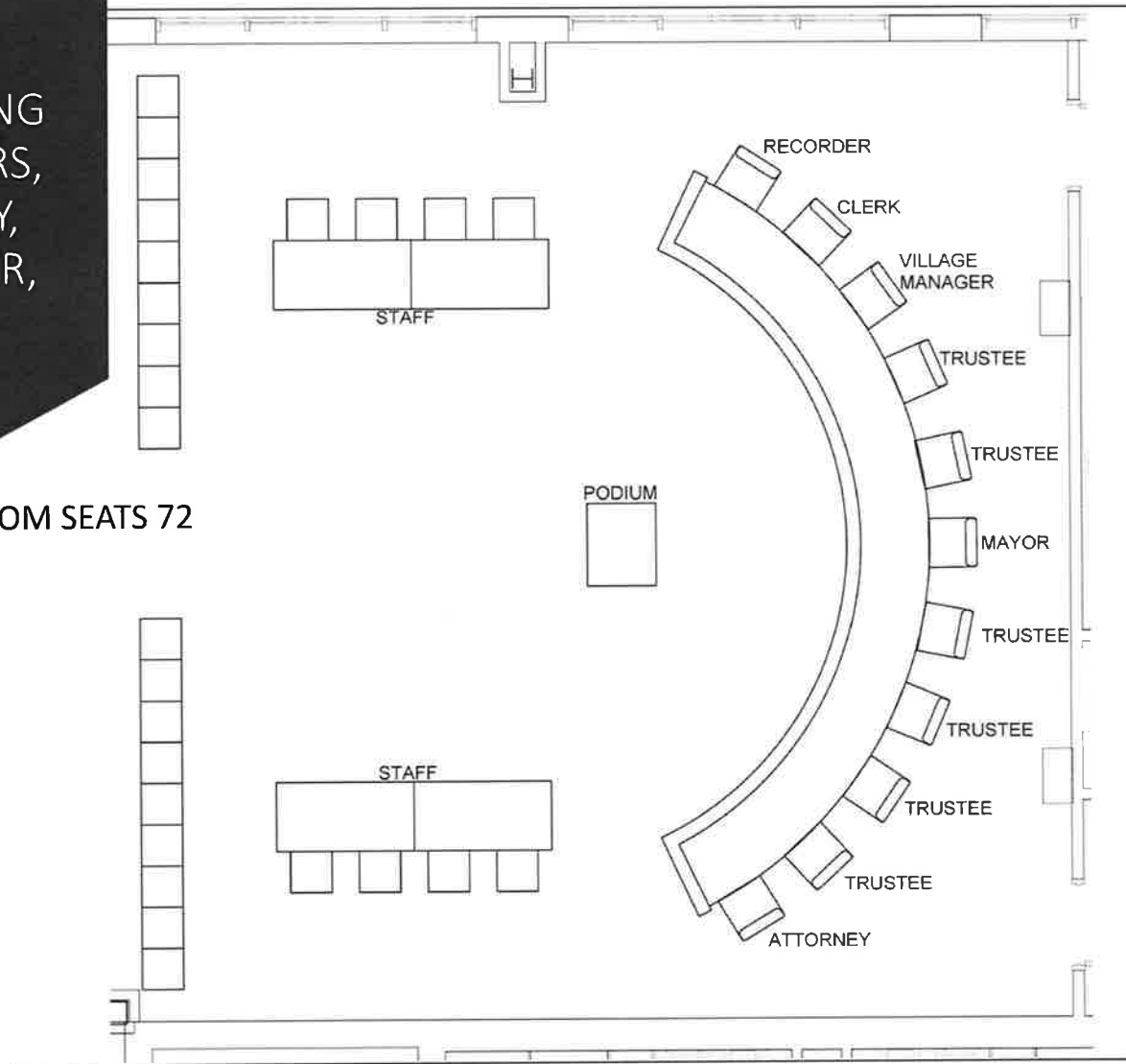
SEATS 9, INCLUDING  
7 BOARD MEMBERS,  
VILLAGE MANAGER  
& ATTORNEY.  
(CLERK & RECORDER SEATED NEARBY.)

ROOM SEATS 90

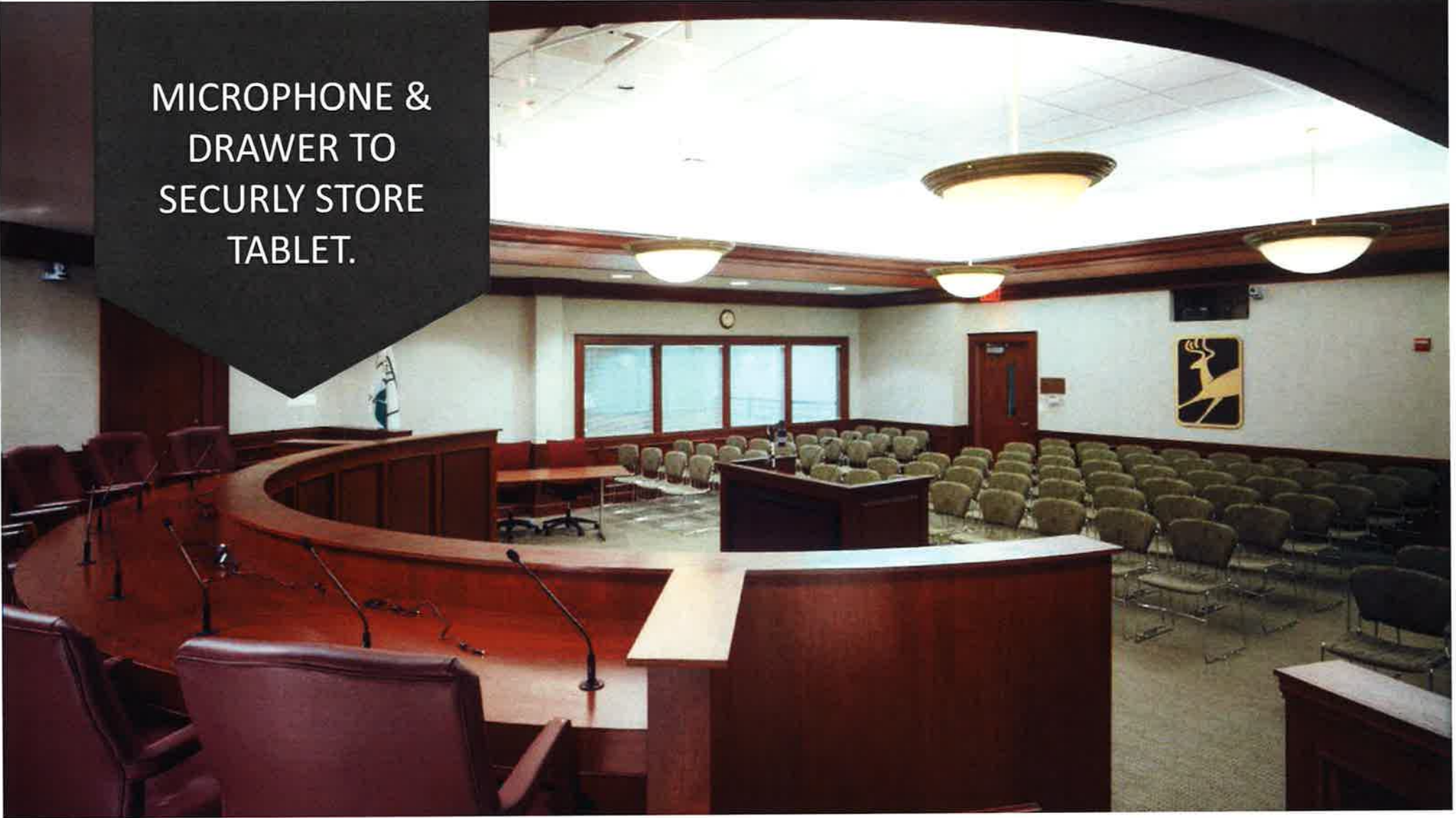


SEATS 11 INCLUDING  
7 BOARD MEMBERS,  
CLERK, ATTORNEY,  
VILLAGE MANAGER,  
& RECORDER.

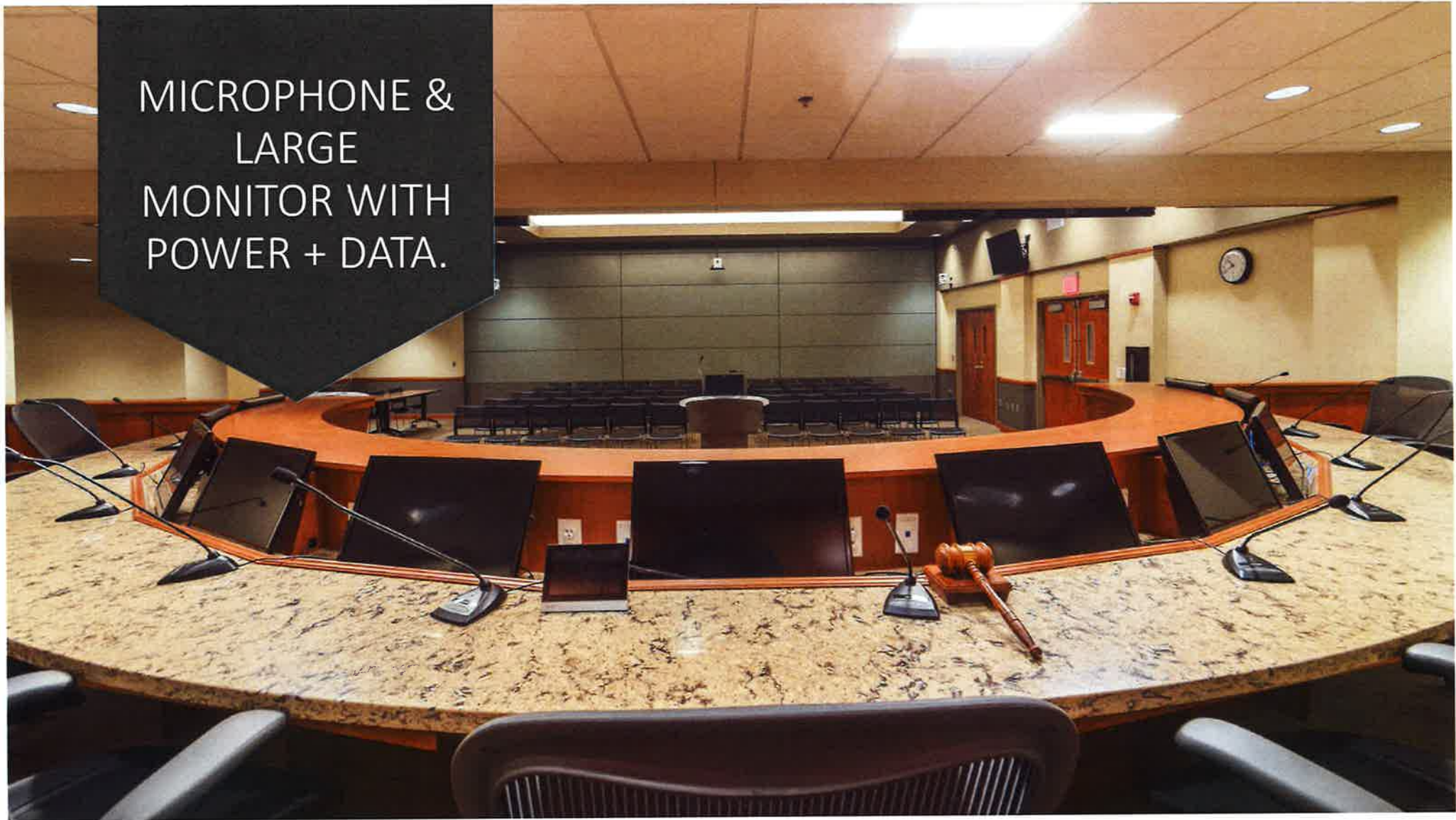
ROOM SEATS 72



MICROPHONE &  
DRAWER TO  
SECURLY STORE  
TABLET.



MICROPHONE &  
LARGE  
MONITOR WITH  
POWER + DATA.

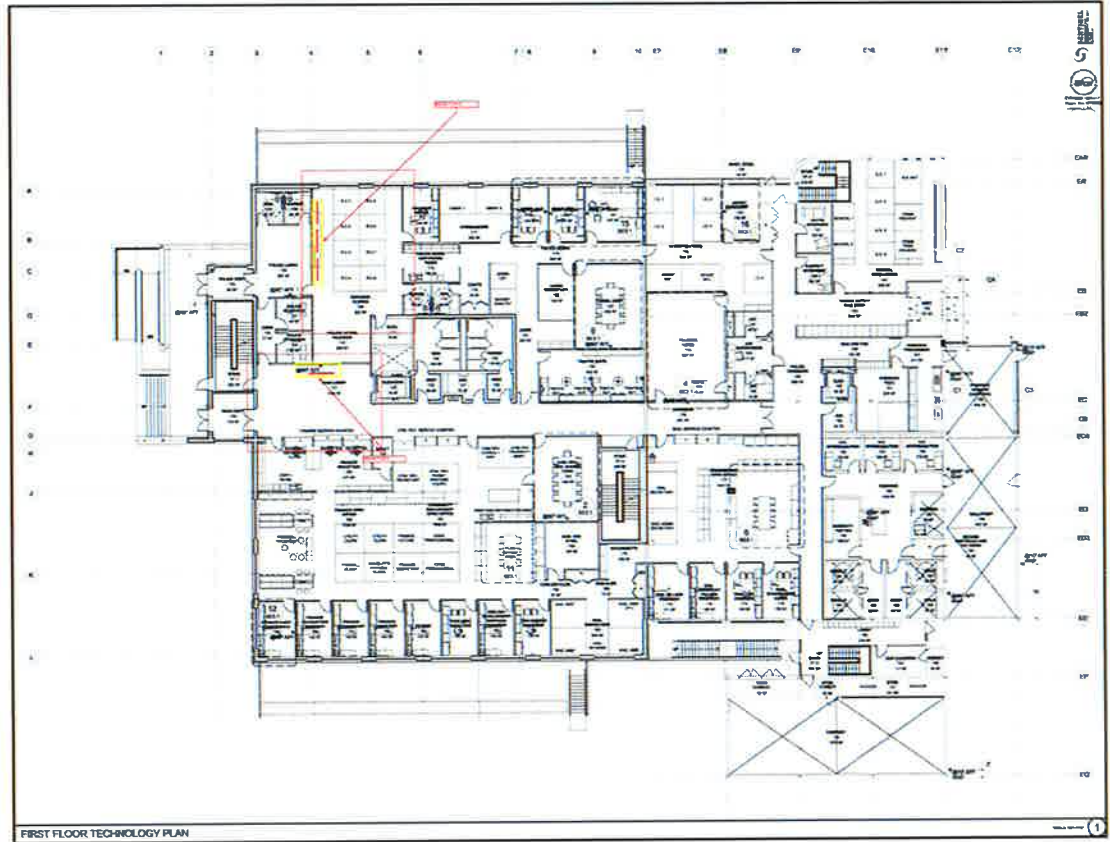
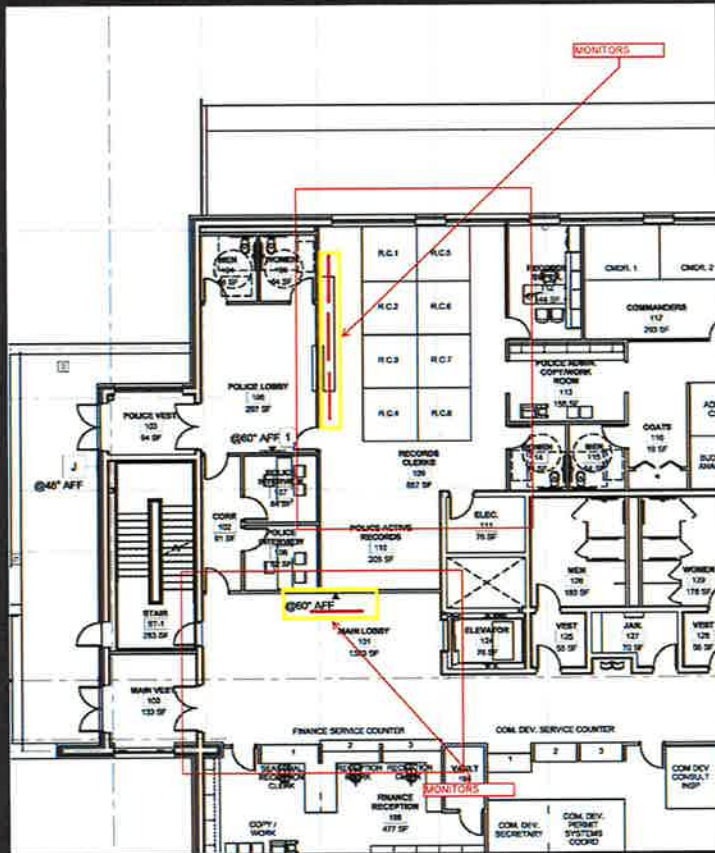




MICROPHONE,  
SMALL  
MONITOR, &  
GROMMETS.



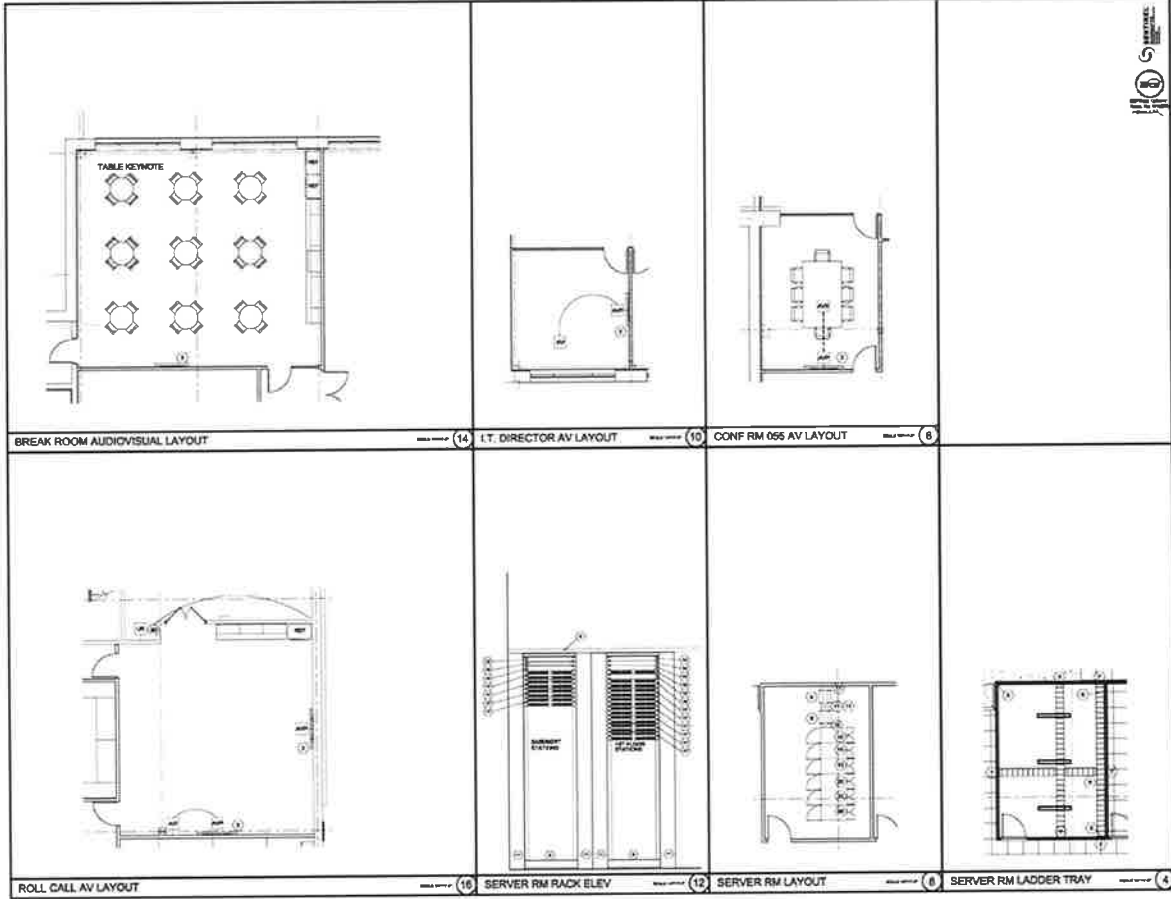
# MAIN LOBBY & RECORDS MONITORS



VILLAGE OF CAROL STREAM  
 VILLAGE HALL & POLICE REMODELING  
 800 GARY AVENUE, CAROL STREAM, ILLINOIS 60184

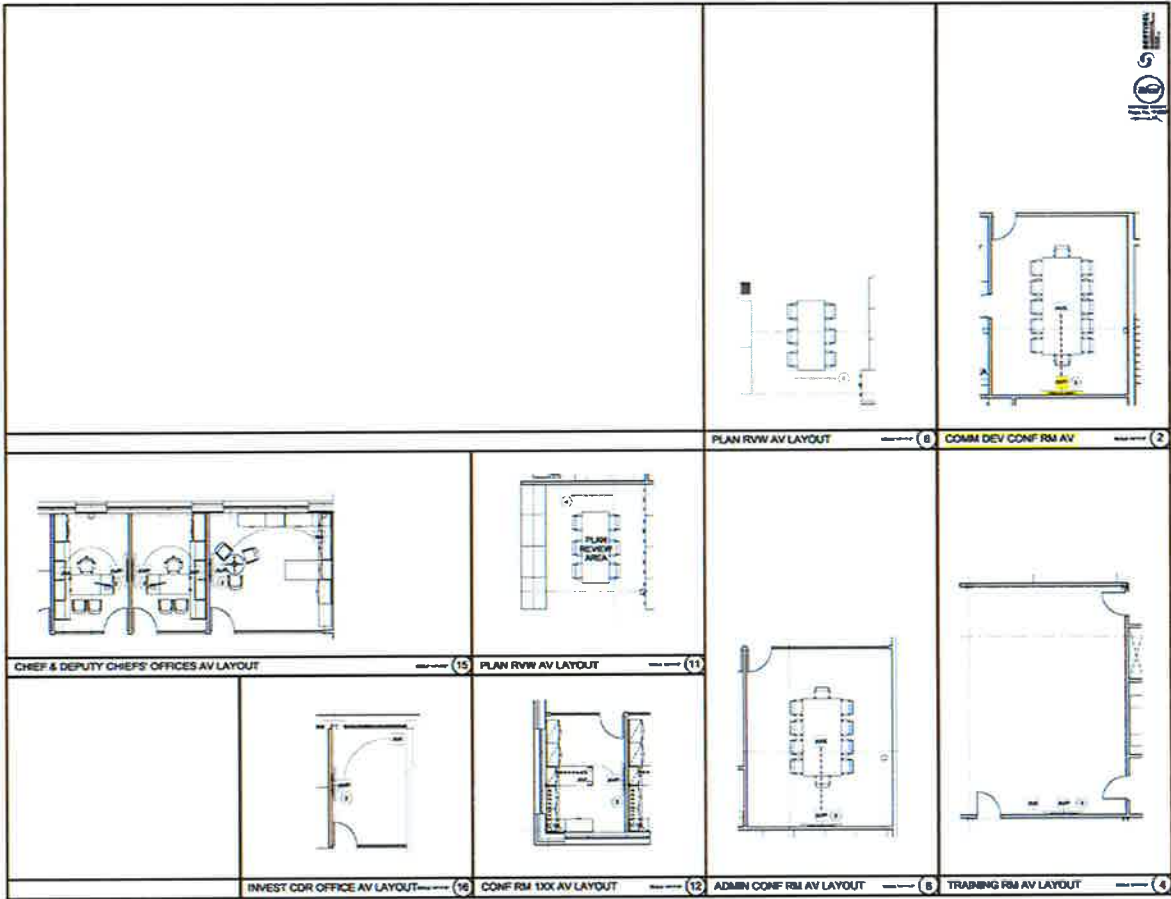
**WILLIAMS ARCHITECTS**  
 ARCHITECTS & INTERIORS  
 1000 W. 15TH STREET, SUITE 100  
 CAROL STREAM, ILLINOIS 60184

**SE1.1**

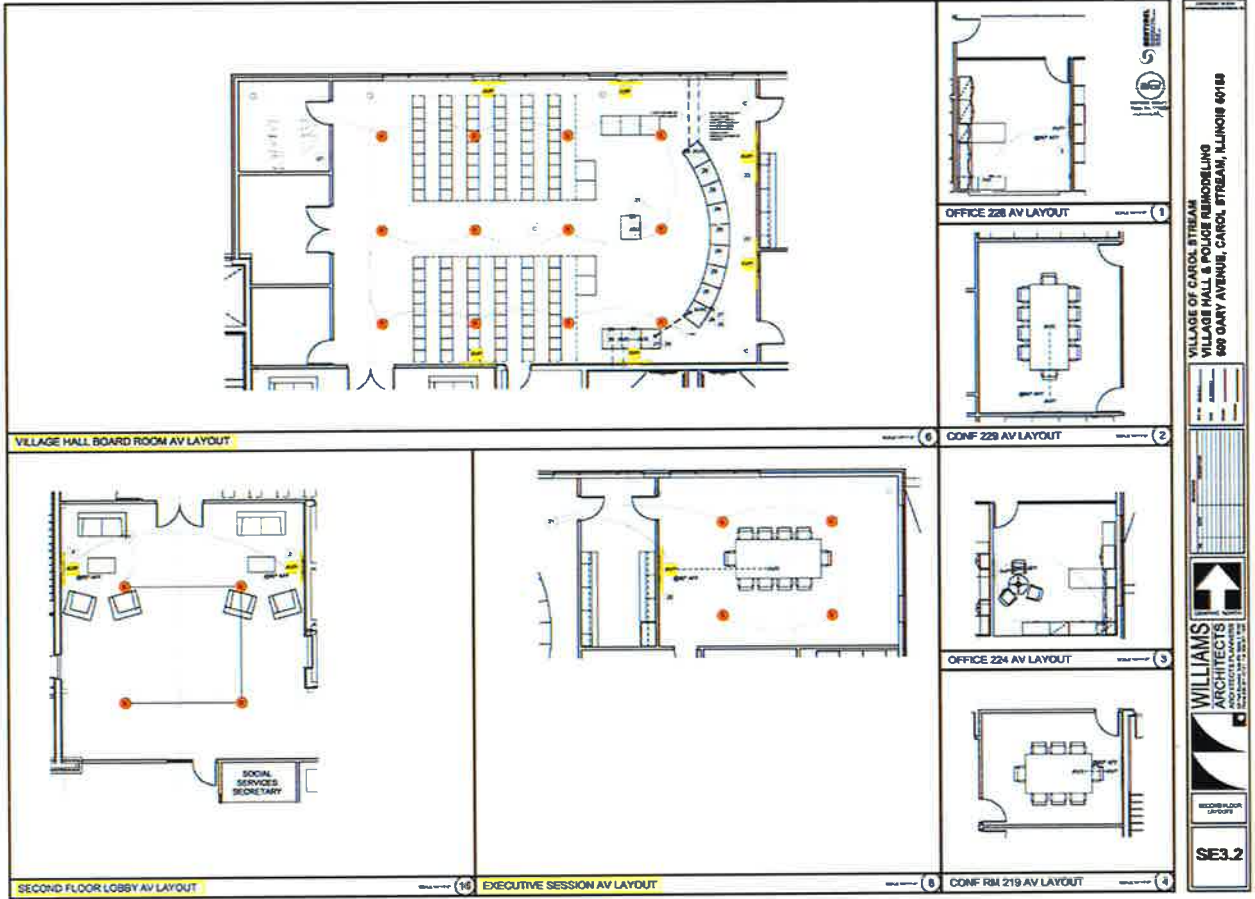


**WILLIAMS ARCHITECTS**  
 ARCHITECTS  
 800 GARY AVENUE, CAROL STREAM, ILLINOIS 60188

**SE3.0**



  
**WILLIAMS ARCHITECTS**  
 ARCHITECTS AND INTERIORS  
 100 GARY AVENUE, CAROL STREAM, ILLINOIS 60188  
 TEL: 708.398.1100  
 WWW.WILLIAMSARCHITECTS.COM  
 SE3.1





SECOND LEVEL LOBBY  
MONITORS

# Village of Carol Stream

## Interdepartmental Memo

TO: Joseph Breinig, Village Manager

FROM: Philip J. Modaff, Director of Public Works

CC: Jon Batek, Director of Finance

DATE: June 09, 2017

RE: WRC Annual Report and Financial Reconciliation for Period Ending April 30, 2017

The Village's Water Reclamation Center (WRC) is operated under contract by CH2M. Each year they are required to submit an Annual Operating Report as well as reconcile any payments due to or from the Village for various expense categories that are subject to a rebate or additional costs. The contract provides the following:

- Repairs - the Village is responsible for 100% of expenses that exceed the Repairs limit.
- Utilities/Solids/Labor & Benefits - the operator is responsible for any amounts that exceed the aggregate established limits for these cost centers. If actual costs come under the aggregate limit amount for these costs centers, that savings is shared 50/50 between the Village and the operator.

Below is a summary of those items for the recently completed contract year:

Item Description	Limit	Actual	% Invoiceable	(Under)/Over
Repairs	\$ 60,000	\$ 61,977.61	100%	\$ 1,977.61
Utilities	\$243,198	\$217,279.30	0%	(\$25,918.70)
Solids	\$160,940	\$129,073.74	0%	(\$31,866.26)
Labor & Benefits	\$625,302	\$637,264.33	0%	\$ 11,962.33
		Aggregate Amount Under Limit:		(\$43,845.02)
		50% of Aggregate Owed to Village:		<u>\$20,933.71<sup>1</sup></u>

Attached you will find the WRC Annual Report prepared by CH2M; representatives will attend the June 19 Village Board Workshop to make a summary presentation of the annual report and to present a rebate check in the amount of \$20,933.71.

Attachment

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<sup>1</sup> The final reconciliation amount represents 50% of the Aggregate Amount Under Limit *minus* 100% of the Repairs overage of \$1,977.61.

Operations Management Services



2016-2017 Annual Operations Report

# Village of Carol Stream







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## Executive Summary

CH2M is pleased to present the Village of Carol Stream with this 2016-2017 annual report, as an overview of activities related to the Village's wastewater facility.

Serving Carol Stream since 1997, we take pride in the projects we deliver and are excited about taking wastewater operations into the future. Our goal is to provide you with an overview of daily operations, system capabilities improvements, permit compliance, cost containment, and trends as compared with present treatment capacities.

CH2M leadership and dedication to quality service is evident by specific accomplishments found throughout the report. We will discuss specific actions CH2M employees in Carol Stream initiated to continue our exemplary service to the Village. Our support for the Water Environment Federation (WEF), American Water Works Association (AWWA), Illinois Environmental Protection Agency (IEPA), Fox Valley Operators Association (FVOA) and the U.S. Environmental Protection Agency (U.S. EPA) further demonstrates our focus on environmental issues in the state of Illinois.

We would like to convey our appreciation to the mayor, council, and Village officials for their support. CH2M understands the importance of being innovative, resourceful, and flexible partners with our clients in government operations, to provide the best solutions for their utility and environmental needs.



The Carol Stream Team: Andy Leibmann, Dan Hughes, Mike Idzior, Susan Ruta, Will King, and Eric Weberski.

## Serving Carol Stream since 1997, we take pride in the projects we deliver and are excited about taking wastewater operations into the future.

In 2016-2017, CH2M worked closely with the Village, design engineers, contractors, and local industries on many projects involving the Water Reclamation Center (WRC) and Industrial Pretreatment Program (IPP). Below are several examples of this collaboration during the 2016 Capital Improvement Plan:

- Installed new LED light poles and fixtures.
- Received a second supervisory control and data acquisition (SCADA) computer.
- Installed sodium bisulfite programmable logic controller (PLC) control paneling.
- Purchased and installed CL17 chlorine analyzer.
- Replaced the ComEd automatic transfer switch (ATO).
- Replaced wear strips and ball bearings on the main gear at clarifier #2.
- Replaced last remaining grease pump unit.
- Installed and hooked up camera security system at the front and rear gates.
- Replaced steam cleaner.
- Fabricated and replaced final weir on aeration basin.
- Decommissioned old lift stations that are no longer in use or needed.

# Wastewater Treatment Facility

The Carol Stream WRC is a conventional activated sludge plant permitted to treat 6.5 million gallons per day (mgd) average daily flow. Staffed 7 days a week, the plant is continually monitored 24 hours per day. The facility is equipped with an automatic dialing alarm (SCADA) system to notify plant personnel of any emergencies.

Exhibit 1 summarizes actual effluent plant performance May 2016 – April 2017.

As seen in Exhibit 1, the average daily flow was 4.4 mgd, or 68 percent of permitted capacity. The 5-day BOD was <3.25 mg/l, or 32 percent of permitted discharge. The TSS was <2.4 mg/l, or 20 percent of permitted discharge, and ammonia-nitrogen was <0.6 mg/l, or 15 percent of permitted discharge.

Exhibit 2 depicts the facility removal efficiency for 2016-2017. The NPDES Permit requires that the 30-day average percent removal for BOD and TSS is not less than 85 percent. Percent removal is a percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter. It is determined from the 30-day average values of the raw wastewater influent concentrations to the facility and the 30-day average values of the effluent pollutant concentrations for a given time period.

**Exhibit 1**  
Carol Stream WRC Performance

Parameter	Average	Limit*
Flow (mgd)	4.40	6.5
5-day biochemical oxygen demand (BOD) [milligrams per liter (mg/L)]	<3.25	10
Total suspended solids (TSS) (mg/L)	<2.4	12
Ammonia – N (mg/l)	<0.6	1.5 – 3.9

\* National Pollutant Discharge Elimination System (NPDES) Permit Parameters

**Exhibit 2**  
WRC Removal Efficiency

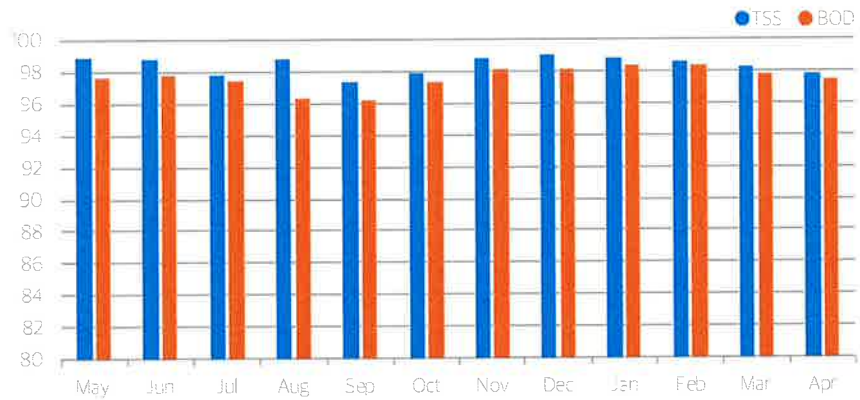


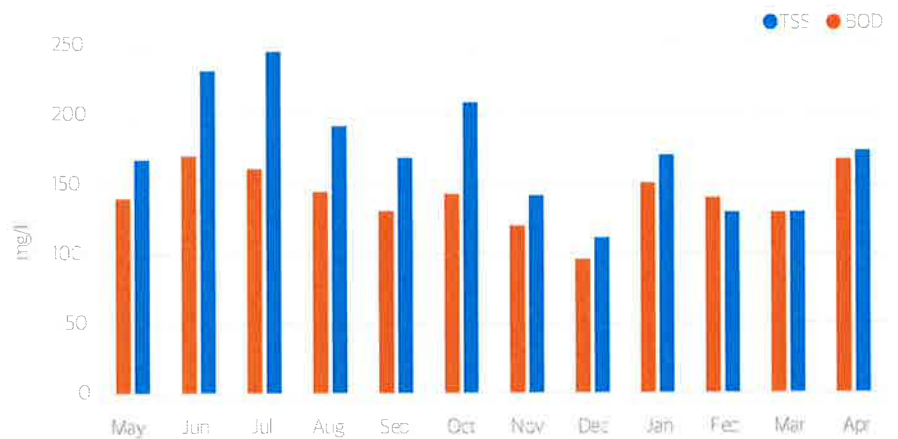
Exhibit 3 depicts influent BOD and TSS concentrations for 2016-2017. Influent BOD and TSS loadings are required to be reported monthly. This is the amount of pollutant that is coming into the treatment plant.

Exhibit 4 depicts effluent BOD and TSS concentrations for permit compliance for 2016-2017. Effluent BOD and TSS concentrations are limits in the Permit and are required to be reported monthly. This is the amount of pollutant that is being discharged after processing through the wastewater treatment plant and entering Klein Creek.

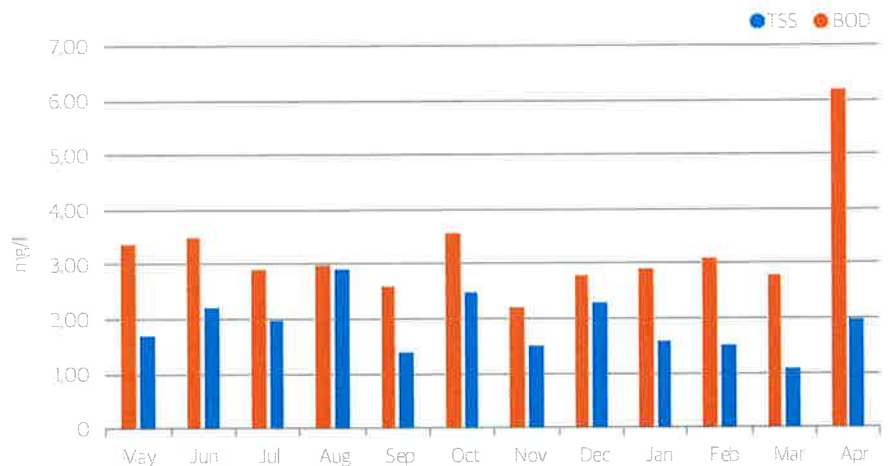
Statistical process control procedures were established to provide continuous compliance with NPDES permit limitations. The mean cell residence time, sludge age, food to microorganism ratio, and sludge volume index are tracked daily to monitor plant performance. Upper and lower control limits have been established to provide guidance when approaching critical stages in the facility's operation.

**A Compliance Evaluation Inspection** conducted at the Carol Stream WRC NPDES Permit No. IL 0026352 by Maureen Brehmer from the IEPA reported **no findings**. All records were maintained as required by the NPDES Permit and in good operating condition.

**Exhibit 3**  
Influent BOD and TSS Loadings



**Exhibit 4**  
Effluent BOD and TSS Concentrations



# Wastewater Treatment Facility



## Repairs

In 2016-2017, CH2M completed necessary repairs including:

- Replaced the ComEd ATO.
- Replaced wear strips and ball bearings on the main gear at clarifier #2.
- Replaced last remaining grease pump unit.
- Replaced steam cleaner.
- Replaced final weir on aeration basin.
- Tuck-pointed the brick on the sand filter building.





Replacing the ComEd ATO using a large crane.



Tuck-pointing the brick on the sand filter building.



Replaced wear strips and ball bearings on the main gear at clarifier #2.

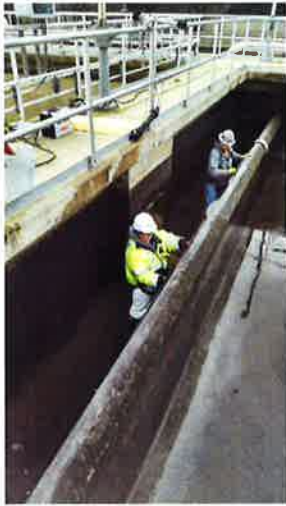


Replacement of grease pump unit.



Replacement of steam cleaner.

# Wastewater Treatment Facility



**In 2016-2017,  
CH2M  
completed  
many  
necessary  
repairs to  
keep the  
WRC  
operating  
efficiently.**



Replacement of final weir on aeration basin.



## WRC Improvements

In 2016-2017, we also completed several projects to improve the WRC. Projects included:

- New LED light poles and fixtures.
- Decommissioned old lift stations no longer in use or needed.



Decommissioned old lift stations.



New LED light poles and fixtures.



# Wastewater Treatment Facility



## Innovations and Technology

The Carol Stream team is always looking for new and productive ways to improve operations at the WRC. In 2016-2017, we developed the following innovations:

- Fabricated a cart to move the welder.
- Fabricated stainless gates and weirs for sand filter improvement.
- Installed back-up SCADA computer.
- Purchased spectrophotometer for laboratory testing.
- Installed a camera security system at the front and rear gates.
- Purchased and installed CL17 chlorine analyzer.



Cart for welder.



Spectrophotometer for laboratory testing.



Fabrication of stainless sand filter gates and weirs.

## Training

CH2M places a high priority on education in safety and provides the necessary equipment and training to comply with federal and state regulations. This protects project personnel, the general public from injury, and CH2M, and the Village from liability.

CH2M's formal training programs increase staff efficiency and levels of expertise. Our program uses individual training plans, correspondence courses, on-the-job training, and cross-training, resulting in a more versatile staff capable of performing a variety of tasks. Accomplishments in 2016-2017 include:

- Lock-out/tag-out training
- Electrical training
- Confined space training
- CPR/AED/First Aid training
- Increase in certifications (Wastewater Operator Classes I and IV, Certified Maintenance and Reliability Technicians, Certified Reliability Leader)
- Fork lift training
- Welding/metals fabrication training
- Ethics and quality training
- Program of sustainability
- Scaffolding
- Fall Protection
- Maintenance and Reliability Best Practices
- Classes in microbiology and enhanced biological phosphorus removal



Conducting fall protection training.



Maintenance and Reliability Best Practices "Book Club".

# Wastewater Treatment Facility



Confined space entry training.



Electrical training.



## Certifications, Awards, and Accomplishments

Several employees at the Carol Stream project received new certifications in 2016-2017. Mike Idzior received his Class I Wastewater Treatment Works Operator certificate from the IEPA, along with Andy Liebmann receiving his Class IV Wastewater Treatment Works Operator certificate.

The maintenance team also received certifications from the Society of Maintenance and Reliability Professionals (SMRP). Both Mike Idzior and Andy Liebmann are now recognized as Certified Maintenance and Reliability Technicians.

Additionally, Mike Idzior was also recognized as a Certified Reliability Leader by the Association of Asset Management Professionals.

# Wastewater Treatment Facility

Another highlight of 2016-2017 was the entire Carol Stream team featured in USA Blue Book's annual catalog. This year's theme was dedicated to the everyday heroes of water and wastewater. The team was not only featured on the cover, a detailed article on the project and the Village was included in the publication.

Other employee highlights include:

- **Dan Hughes** attended training in maintenance and reliability, enhanced biological phosphorus control, several seminars, and has been active in the DuPage River Salt Creek Workgroup (DRSCW). He continues to work with multiple entities to meet the goals of the permit with technology for phosphorus control.
- **Susan Ruta** began her third year serving the Fox Valley Operators Association (FVOA), this year as President. The FVOA has been bringing together wastewater operators from the Fox Valley and surrounding areas for more than 50 years. The Association's main focus is operators, but is also comprised of a variety of occupations in the wastewater field. She attended several seminars covering topics in wastewater and enhanced biological phosphorus control.
- **Mike Idzior** attended several seminars covering maintenance and reliability, as well as topics in wastewater and enhanced biological phosphorus control. He also took the lead performing the condition assessment of critical assets at the WRC, and became nationally recognized as a Certified Reliability Leader and Certified Maintenance and Reliability Technician.
- **Andy Liebmann** attended a training course in Electrical Fundamentals for Water and Wastewater, which addressed specific electrical considerations found in the water and wastewater industries. He also assisted in the condition assessment of critical assets with Mike Idzior, became recognized as a Certified Maintenance and Reliability Technician, and attended a seminar in enhanced biological phosphorus control.
- **Eric Weberski** attended a 16-week course in wastewater operations and maintenance. He also attended seminars with **William King** on wastewater microbiology and process control, and on enhanced biological phosphorus removal.



# NPDES Permit

As required by the NPDES Permit, a Phosphorus Discharge Optimization Plan has been developed and updates are submitted to the state. A copper and zinc translator study was performed, and a progress report was also submitted to the state. Additionally, collection of data and development of a site-specific water quality based effluent limitations (WQBEL) study was performed on stream pH, temperature, and ammonia-nitrogen. Monitoring for phosphorus, copper, and zinc discharges continue.

CH2M Water  
Business Group  
has developed  
a Phosphorus  
Discharge  
Optimization Plan.



# Solids Handling

We operate our biosolids treatment processes to reduce volume, facilitate handling and transport, destroy pathogens, and control odor. Exhibit 5 represents the amount of biosolids in dry tons that were removed and pressed from the system; the solids were then hauled to the landfill for disposal. Through plant optimization, a drier sludge is being produced, thereby reducing the amount of annual dry solids being transported and saving costs.

Exhibit 5  
Biosolids Removed



# Laboratory

Measuring the environmental impact of treated wastewater to the receiving waters is our main laboratory objective. All sampling we conduct for state and federal permit requirements are performed in-house or sent to a state-certified laboratory for analysis. Our in-house laboratory services perform process control analysis of the activated sludge process and are an integral part of our overall operation of the wastewater treatment system. Our goal is to provide regulatory agencies with reliable, accurate, and up-to-date information to enhance their ability to serve our clients and protect the environment. In 2016-2017, there were more than 1,980 samples taken and tested for compliance with the daily limits of the NPDES permit. Additionally, semi-annual metals samples for effluent, influent, and sludge were collected and tested, as well as priority pollutants. All permitted industries were tested for their individual permits as required by industrial pretreatment regulations.

Required parameters in the permit include:

- Flow
- Biochemical Oxygen Demand (BOD)
- Carbonaceous Biochemical Oxygen Demand (CBOD5)
- Total suspended solids (TSS)
- Ammonia-nitrogen
- Dissolved oxygen
- Total phosphorus
- Total nitrogen
- Nitrates + nitrites
- Copper
- Zinc
- pH
- Temperature
- Fecal Coliform
- Total residual chlorine
- Chloride
- Dissolved phosphorus
- Total Kjeldahl nitrogen
- Alkalinity

Statistical analysis for each parameter is analyzed and graphed, showing upper and lower control limits. Laboratory personnel are responsible for entering daily laboratory data into a computerized operational database. The data is transferred into a computerized NPDES form for reporting to IEPA. Being intimately familiar with daily analytical data, the laboratory is the first line of defense in identifying potential problems associated with permit compliance.

The Carol Stream laboratory is a part of our internal quality control program. We pride ourselves in the quality control measures we take to validate and corroborate our analytical data.

The following list reflects routine minimum standards for CH2M laboratories:

- Adherence to CH2M's comprehensive quality assurance/quality control (QA/QC) program for all permit-required analyses, including, but not limited to, precision and accuracy results and corresponding control charts.
- Chain-of-custody documentation for all samples entering or leaving the facility (internal or external), which are kept in CH2M bound and numbered books.
- A Chemical Hygiene Plan, including Safety Data Sheets (SDSs) for all chemicals and reagents, emergency response, training sign-off sheets, and any site-specific requirements.
- Segregation of existing chemical stock according to chemical compatibility; all chemicals and reagents exceeding the expiration date are discarded according to state and local guidelines.
- Standard operating procedures for all chemical and physical analyses.
- A comprehensive computerized preventive maintenance (PM) program for all laboratory equipment.

# Maintenance

Cost control through effective preventive maintenance (PM) and corrective maintenance (CM) is a hallmark of our success. Our ability to provide effective maintenance management is well known and is confirmed by viewing equipment records.

CH2M's approach to maintenance involves three functions: PM, repair (scheduled and unscheduled), and predictive maintenance (PdM). We have found that by concentrating on PM and PdM, best practice, and reliability-centered maintenance activities, we can control costs because warranties are protected.

The Carol Stream maintenance team utilizes Maintenance Connection<sup>®</sup>, an enterprise asset-management program. The program allows us to better meet the needs of the project and to facilitate efforts to support additional asset-management functions. The Carol Stream maintenance program consists of audits and analyses of equipment condition, warranty status, and repair records. The information gathered from our analysis is used to populate Maintenance Connection<sup>®</sup> and establishes baselines for ongoing maintenance activities and inventory control. The computerized maintenance management system (CMMS) serves as the pivotal tool for guiding and tracking all onsite corrective, preventive, general, and emergency maintenance activities.

From May 2016 through April 2017, we completed **2,998 total work orders**, including 1,547 PM tasks and 118 corrective repairs at the Carol Stream WRC. A breakdown of maintenance work orders are located in Exhibit 6.

Several PdM activities performed by the operations staff included using infrared detectors, vibration analyzers, temperature probes, and power/ampere meters. This data is tracked to aid the prediction of possible equipment problems. By taking a proactive maintenance approach, we can prevent breakdowns or the loss of major components. For example, infrared scanners allow us to detect hot spots in electrical equipment that can result from frayed wiring, loose connections, corroded connections, or failing parts. Detecting and repairing these problems, usually at a slight cost, can prevent the total failure of an expensive electrical device. Vibration analyzers allow us to detect and record vibration histories for high speed pumps and motors.

A CMMS is an integral part of the Carol Stream facility. It keeps the staff fully informed of the facility's maintenance and repair status, and confirms that proper maintenance is being performed to protect the Village's capital investment. Presented below is a brief description of our capabilities using the computerized operations and maintenance program (COMPs). Part of COMPs is the PM and CM management system.

The program includes the following main areas of information handling, which are necessary for effective maintenance management:

- **Equipment and facility item information.** This includes location, manufacturer, model and serial numbers, replacement cost, startup data, meter readings, supplier information, nameplate data, recommended spare parts, and notes.
- **Documentation of PM procedures.** This module includes estimated time to perform work; craft or job skill required; budget identification for the work; associate assigned to perform the work; tools, materials, and spare parts needed; and instructions for proper and safe repair procedures.
- **PM scheduling.** This program allows the user to assign appropriate intervals for PM of each piece of equipment according to the manufacturer's standards. The program lists all work to be performed, identifies the due date, and continues to note the PM work until it has been completed. The program also automatically calculates costs based on the labor and materials estimated for the procedures.
- **CM tracking.** This furnishes the user with a method for tracking performance and cost of CM. Work orders are used in conjunction with this program.
- **Staffing information.** Employee information regarding name, craft, pay rate, and shift schedules are stored in this program, allowing effective scheduling for PM tasks.



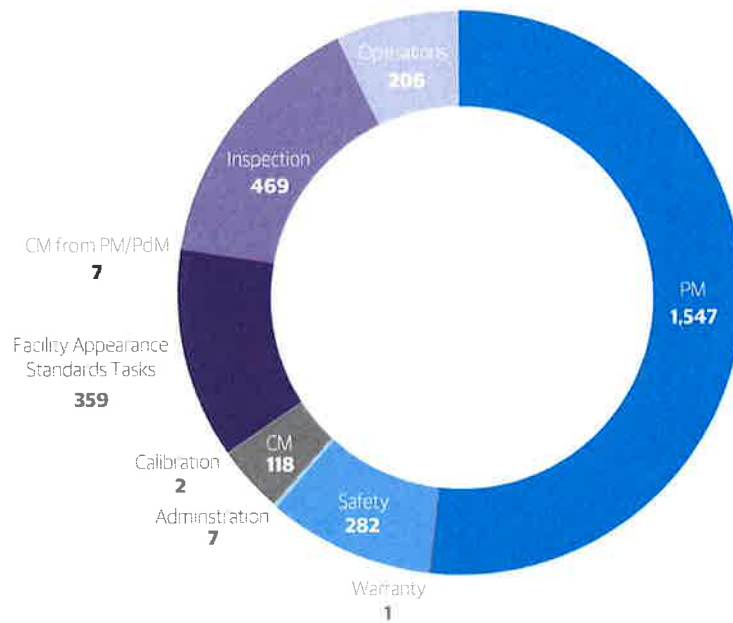
# Maintenance

Maintenance Connection® has a very powerful customizable reporting capability, including reports that examine and track all costs associated with maintenance activities, making it easy for us to identify our savings. Each report includes equipment identification and descriptive report:

- Equipment task report
- CM work order history and summary report
- Equipment data report
- PM procedures report
- Tools report
- Employee report
- CM work order status report
- CM performance report

All reports can be reviewed on screen or printed, and each can be manipulated to suit the user's needs. These reports can be printed quickly and easily if a question arises concerning a particular piece of equipment or the program in general. A breakdown of maintenance activities, by hour, is highlighted in Exhibit 6.

**Exhibit 6**  
Maintenance Work Order Activity Summary



# Maintenance

An extensive Condition Assessment was performed this year by the maintenance staff and Jeff Sanford, a senior asset and maintenance management consultant with CH2M. This included using infrared thermography, vibration analyzers, temperature probes, and power/amperage meters. This data is tracked to aid the prediction of possible equipment problems and to help identify projects for upcoming capital improvement.

This condition assessment process provides a picture (a snapshot in time) of asset health, provides asset remaining life values, and helps determine maintenance priority.

Condition assessment findings showed the majority of assets assessed (460 or 91 percent of the total assets) are in very good or good condition. These assets are likely to require only minor additional maintenance and will function properly with a continuation of the current level of maintenance and maintenance practices. A small number of assets (14 or 3 percent) were indicated to be in fair condition. These few assets may require some immediate attention and possibly a change to the level or frequency of maintenance. Only 25 assets (5 percent) were identified to be in poor or very poor condition. Within 7 months, all of these conditions were addressed or repaired.

Coupled with the condition assessment procedure, is a risk analysis. This helps determine asset criticality, is a basis for selecting maintenance strategies, and for determining condition assessment focus and frequencies. This was completed with the help of the Village of Carol Stream's Director of Public Works, Phil Modaff, and CH2M staff.



Valve stem replacement.



Clarifier sweep replacement.



Influent screw pump pit cleaning.



Diffuser replacement in aeration basins.



Probe maintenance.

# Industrial Pretreatment Program

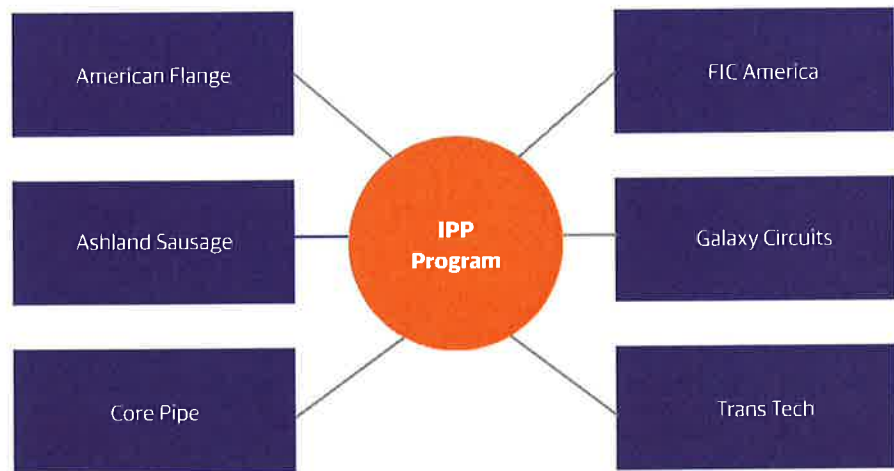
The Village of Carol Stream's IPP currently is comprised of five categorical industrial users and one industrial user. Exhibit 7 is a summary of the IPP.

Administrative information reported on the Annual Pretreatment report includes a narrative of achievements, public education, problems, and substantive changes during the reporting period.

IPP activities during our project year included:

- CH2M performed semi-annual metals and priority pollutant testing on effluent, influent, and sludge from the publicly owned treatment works (POTW).
- CH2M performed annual inspections and sampling for the permitted significant industrial users.
- CH2M updated industrial fact sheets for each permitted industry.
- CH2M participated in sponsoring a summer concert series at Carol Stream, which included an informative session with the people of Carol Stream regarding wastewater and sustainability.
- Tours were conducted for middle school, high school, elementary school, and college classes demonstrating wastewater treatment and information on wastewater and water quality.
- Participation in the Salt Creek Watershed Study Group.
- Surcharge billing calculations were submitted quarterly for BOD; TSS; and fats, oils, and grease (FOG).
- CH2M performed phosphorus testing at each of the permitted industries.
- A total of 876 work hours and \$38,580.00 was devoted to managing the pretreatment program in 2016-2017.
- CH2M began a lengthy survey of all businesses in Carol Stream and continues to update the information.

Exhibit 7  
IPP Customers



# Safety

CH2M places a high priority on safety and provides the necessary equipment and training to comply with federal and state regulations, which protects project personnel and the general public from injury, and CH2M and the Village from liability.

During 2016-2017, employees at the Carol Stream project implemented the following improvements as part of our safety action plan:

- Updated the facilities site-specific safety plan.
- Expanded and updated the emergency response plan.
- No Occupational Safety and Health Administration (OSHA) recordable incidents. Weekly staff safety meetings and quarterly site inspections are held to make sure OSHA regulations are followed.

To remain accident free from known safety hazards, our team also participated in the following:

- Held weekly safety team meetings.
- Corrected all safety review findings by the end of the contract year.
- Held at least 40 tailgate sessions, totaling 10 hours of safety training for each employee.
- Identified unsafe conditions with monthly inspections by the safety team, and made all project employees aware of unsafe conditions during safety training sessions.
- Completed or reviewed 20 job safety analyses.
- Maintained permit compliance.
- Increased state certifications.
- Minimum of 12 hours technical training per employee.

**CH2M places a high priority on safety.**



# Community Involvement

Our goal is to continue our growth in the Village of Carol Stream as a civic-minded organization, sensitive to the needs of our community. Our concept is to support local projects and embrace the community as it has so graciously embraced us.

The following list shares several ways our employees have supported organizations, schools, and local groups with environmental efforts and community involvement programs during 2016-2017:

- Participated in the 19<sup>th</sup> Annual Pond and Stream Sweep Cleanup initiative for Klein Creek.
- Conducted educational tours for several area schools and community groups.
- Participated and provided sponsorship for Carol Stream 2016 Summer Concert Series.
- Participated in Adopt-a-Highway (Birchbark Trail) and have adopted the bicycle path on the northeast side of the wastewater treatment plant.
- Laboratory Supervisor Susan Ruta, is acting president of the FVOA.
- Christmas sharing program.
- Annual Open House in October for residents with guided plant tours, hay rides, touch-a-truck, exhibits from the Conservation Foundation and the Carol Stream Public Library, and free pumpkins for children.



Annual Village of Carol Stream WRC Open House in October.

# Community Involvement



Students learn about the WRC.



Christmas sharing program.

**Our goal is to continue community involvement in the Village of Carol Stream.**

# Community Involvement



Klein Creek clean-up.

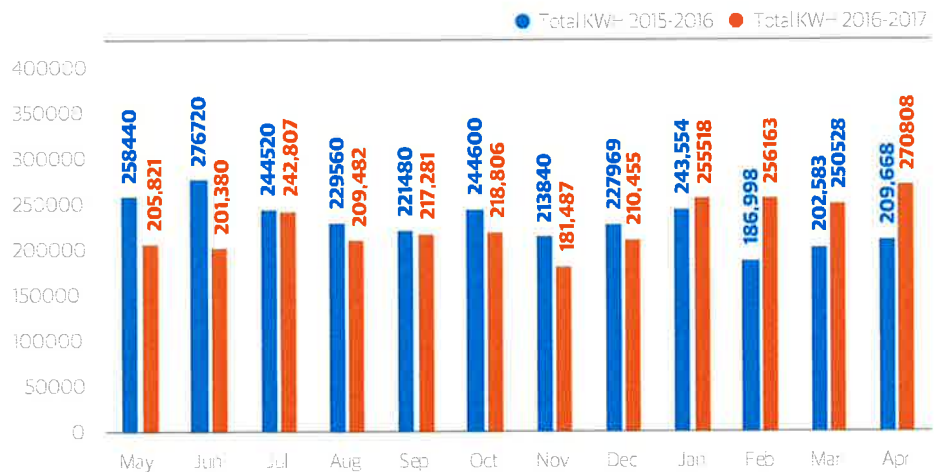
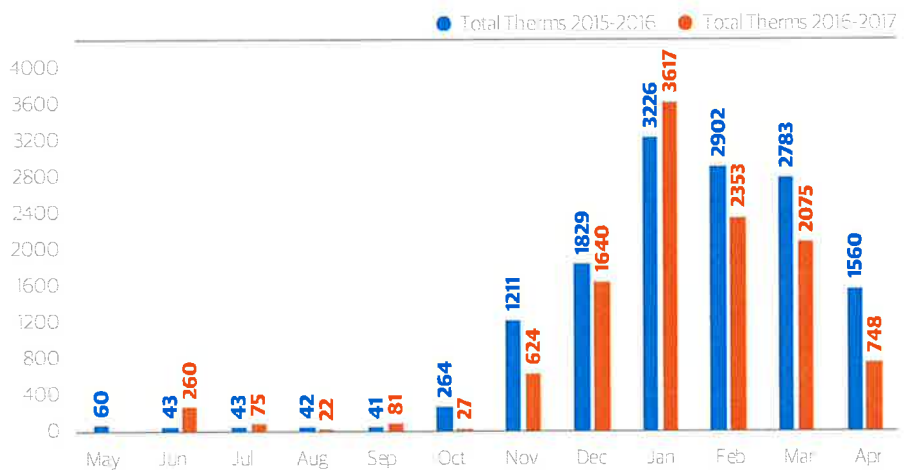


Concert in the Park.

# Sustainability

At CH2M we are committed to developing sustainable business practices. We pledge to develop strategies that enable us to move toward sustainability while enhancing the value to the citizens of Carol Stream. Exhibit 8 highlights Carol Stream's natural gas and electrical consumption.

**Exhibit 8**  
Natural Gas and Electrical Consumption Monthly Comparisons

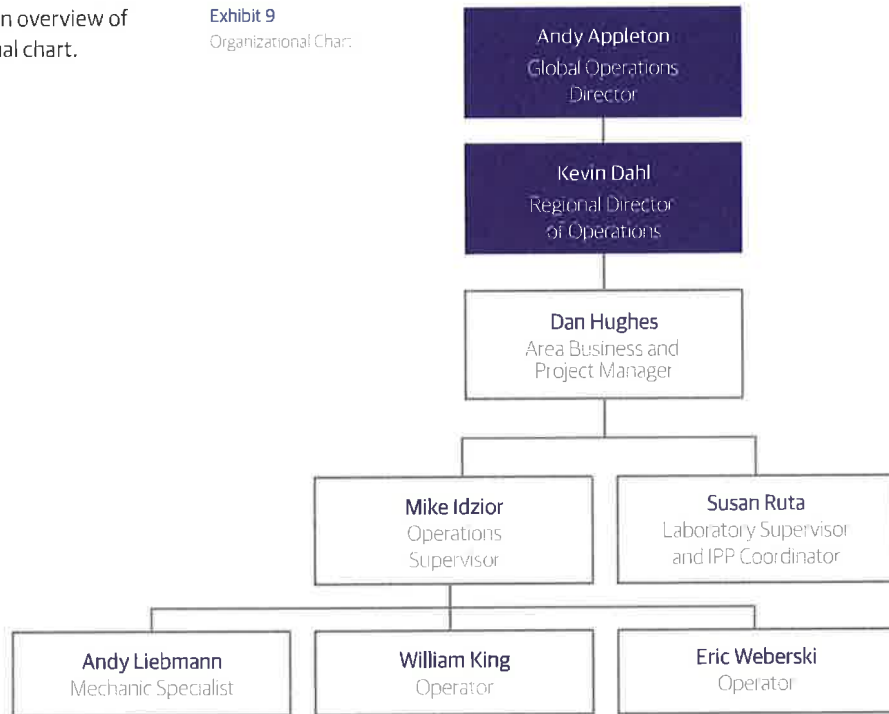




# Senior Leadership Support

Highlighted in Exhibit 9 is an overview of Carol Stream's organizational chart.

Exhibit 9  
Organizational Chart:



Carol Stream Team with senior leadership (Andy Liebmann, Mike Idzior, Susan Ruta, Eric Weberski, Caroline Cryer, William King, Andy Appleton, Dan Hughes).

# Financial Review

This section is an overview of the wastewater treatment system and a summary of rebateable expenditures. We are committed to continuing the same degree of cost containment achieved in 2016-2017 going forward. Exhibit 10 is an overview of financial activities at the facility.

CH2M understands the importance of cost containment and is pleased to have performed our operations under budget, thus saving the Village of Carol Stream \$20,933.70 in the aggregate of repairs, electrical, and solids disposal costs.

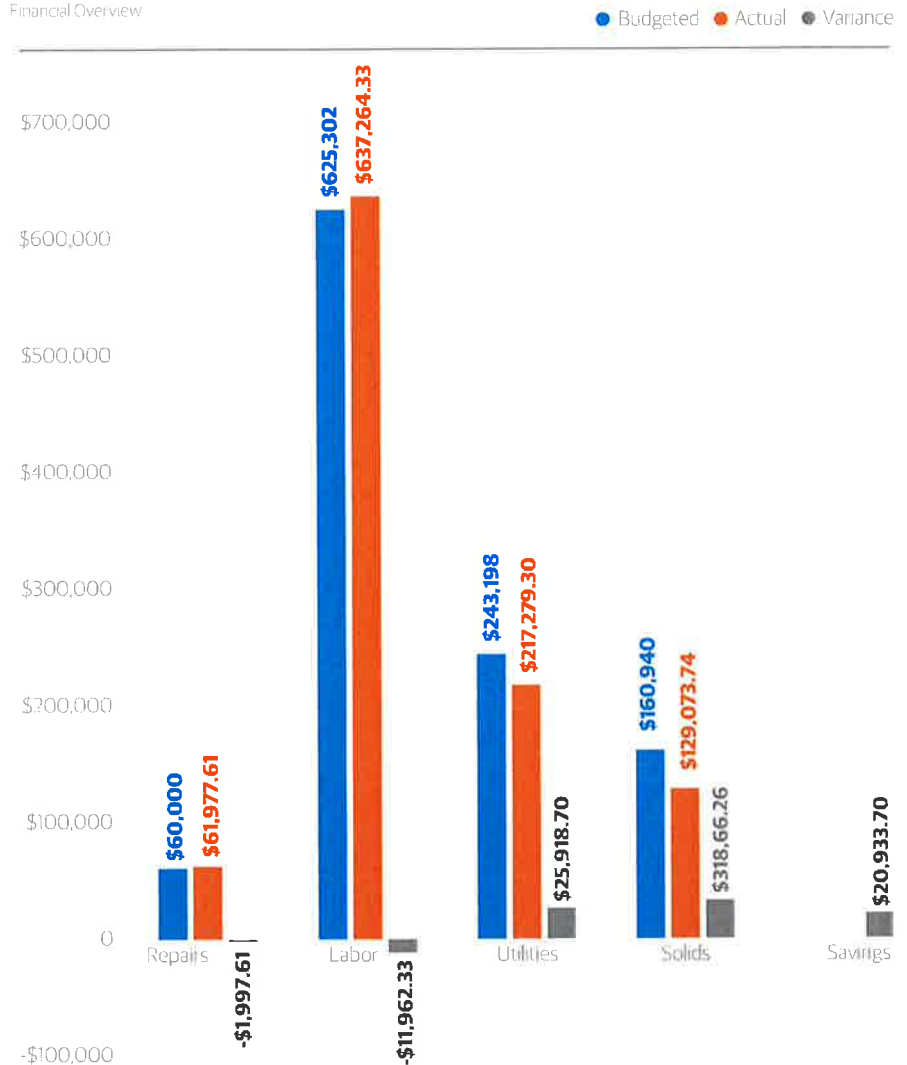
Exhibit 11 differentiates our actual expenditures in repairs, utilities, solids disposal, and labor costs.

CH2M employees at the Carol Stream project actively participated in the establishment of goals for our 2016-2017 Annual Project Business Plan. Our mission is focused on exceeding the Village's expectations, providing a safe working atmosphere for our employees, and preservation of the environment.

**Exhibit 10**  
Carol Stream Financial Overview

	Budget	Actual
Labor and Benefits	\$625,302	\$637,264.33
Repairs	\$60,000	\$61,977.61
Utilities	\$243,198	\$217,279.30
Biosolids Processing and Disposal	\$160,940	\$129,073.74
<b>Total</b>	<b>\$1,089,440</b>	<b>\$1,045,594.98</b>

**Exhibit 11**  
Financial Overview



# Financial Review

Exhibit 12 lists specific areas of Capital Improvement Projects in 2016-2017. The Capital Improvement Budget was \$125,000.

## Exhibit 12

Capital Improvement Projects

Process Area	Project MC Project Code	Work Description	Project Total
Aeration	LED Lighting	Installed new LED light fixtures with poles and outlets. Rewire if necessary.	\$19,875.00
Disinfection	SBS PLC control Wiring	Wired up 4-20 mA for PLC control of SBS pumps.	\$1,720.00
Disinfection	Cl7 purchase	Purchased and installed of Chlorine Analyzer for dosing.	\$3,107.01
Secondary Clarifiers	Rebuild	Replaced wear strips and bearings in main drive.	\$14,500.00
Headworks	Grease Pump	Replaced last remaining grease pump unit.	\$5,367.00
Grounds	Security Camera	Purchased and installed front gate security camera.	\$2,050.00
Grounds East Side	Decommission	Decommissioned old east side lift station and filled with gravel.	\$13,741.72
Aeration	Aeration Weir	Fabricated and replaced the aeration weir.	\$2,762.16
SCADA	SCADA II	Purchased back-up SCADA computer with software licenses.	\$10,045.74
Boiler Room	Steam Cleaner	Purchased of new steam cleaner.	\$10,755.74
Incoming Electric Feed	ATO switch	Replaced the Com Ed ATO switch.	\$40,000.00
<b>Total</b>			<b>\$123,923.63</b>

## Summary

In summary, 2016-2017 brought about many challenges for the Carol Stream team. We are excited about tough challenges and solving them in creative and innovative ways. We are also proud of the following accomplishments:

- We take pride in our outstanding track record with safety, and are known as one of the CH2M model facilities.
- Working closely with the Village on monitoring the IPP Program, and exceeding our customers' expectations.
- Proud of our proactive approach to PM and CM.
- Focusing on plant appearance to protect the environment and provide natural areas.
- Leader in innovation and technology.
- Providing exceptional advanced wastewater treatment.
- Continuing our team efforts with the Village on capital planning and O&M related issues affecting the wastewater treatment facility.



We fully understand the importance of the WRC as related to the future growth and development of the Village. **We are excited about the challenges we tackle and are inspired by the opportunities.**

[www.ch2m.com](http://www.ch2m.com)  
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