

**VILLAGE OF DOWNERS GROVE**  
**Report for the Village**  
**6/7/2022**

<b>SUBJECT:</b>	<b>SUBMITTED BY:</b>
Award of Contract - SCADA Improvements	Andy Sikich Public Works Director

**SYNOPSIS**

A resolution has been prepared authorizing execution of a contract for professional services to Concentric Integration of Crystal Lake, IL in the not-to-exceed amount of \$312,585.00 which includes a 5% contingency.

**STRATEGIC PLAN ALIGNMENT**

The goals for 2021-2023 include *Top Quality Infrastructure*.

**FISCAL IMPACT**

The FY22 Budget includes \$195,000 in the Water Fund, and \$100,000 in the Storm water Fund for SCADA system maintenance.

**RECOMMENDATION**

Approval on the June 7, 2022 consent agenda.

**BACKGROUND**

Concentric Integration performed a Supervisory Control and Data Acquisition (SCADA) system assessment in 2021 that evaluated the critical components of the Village's SCADA system. SCADA refers to an industrial control system which is a computer system monitoring and controlling process. In the Village, the SCADA system is used to monitor, record and control the operations of the drinking water system and the storm water pumping stations. This assessment provided a plan for SCADA improvements and upgrades in future years to keep the system running efficiently and implement new technology that will make it a more useful tool for managing Village infrastructure.

This contract with Concentric addresses some of the recommended improvements from the SCADA assessment, and includes upgrades to the stormwater pump stations at Florence & Ogden and Denburn Woods, as well as the stormwater grate at Hill & Grand. Also included in this contract is an upgrade to the current SCADA software and cybersecurity improvements. The current SCADA software is outdated and has limited support from the software developer.

Staff has worked with Concentric on a variety of SCADA projects as well as ongoing non-contract service and support since 2007. Concentric has provided consistently superior service and highly trained staff to the Village. Among the unique aspects of Concentric are:

- 1) Experts in the critical technologies that are used in the Village
- 2) Guarantee their 24 hours/day, 7 days/week responsiveness (response within 30 minutes)
- 3) Uniquely skilled and qualified in industrial cyber security
- 4) They are the largest Water/Wastewater Systems Integrator in the area

Concentric Integration is currently an approved sole source supplier for the SCADA system software and hardware support and maintenance, and has specific knowledge and insight into the Village's SCADA system.

## **ATTACHMENTS**

Resolution  
Agreement

**RESOLUTION NO. \_\_\_\_\_****A RESOLUTION AUTHORIZING EXECUTION OF AN  
AGREEMENT BETWEEN THE VILLAGE OF DOWNERS GROVE  
AND CONCENTRIC INTEGRATION**

BE IT RESOLVED by the Village Council of the Village of Downers Grove, DuPage County, Illinois, as follows:

1. That the form and substance of a certain Agreement (the "Agreement"), between the Village of Downers Grove (the "Village") and Concentric Integration (the "Consultant"), for improvements to the SCADA system used to monitor, record and control the operations of the water system, as set forth in the form of the Agreement submitted to this meeting with the recommendation of the Village Manager, is hereby approved.

2. That the Village Manager and Village Clerk are hereby respectively authorized and directed for and on behalf of the Village to execute, attest, seal and deliver the Agreement, substantially in the form approved in the foregoing paragraph of this Resolution, together with such changes as the Manager shall deem necessary.

3. That the proper officials, agents and employees of the Village are hereby authorized and directed to take such further action as they may deem necessary or appropriate to perform all obligations and commitments of the Village in accordance with the provisions of the Agreement.

4. That all resolutions or parts of resolutions in conflict with the provisions of this Resolution are hereby repealed.

5. That this Resolution shall be in full force and effect from and after its passage as provided by law.

\_\_\_\_\_  
Mayor

Passed:

Attest: \_\_\_\_\_  
Village Clerk

## AGREEMENT

This Agreement is made this \_\_\_\_ day of \_\_\_\_\_ 2022 by and between Concentric Integration ("Consultant") and the Village of Downers Grove, Illinois, an Illinois municipal corporation with offices at 801 Burlington Avenue, Downers Grove, Illinois 60515, ("Village").

WHEREAS, the Village wishes to retain the services of the Consultant to make improvements to the Village's SCADA system; and

WHEREAS, the Consultant is willing to perform these services for compensation and in accordance with the terms and conditions described in this Agreement.

NOW, THEREFORE, in consideration of the mutual benefits that will result to the parties in carrying out the terms of this Agreement, it is agreed as follows:

### **I. Scope of Services**

See attached Proposal dated April 4, 2022 for improvements to the storm station sites. See attached Proposal dated March 31, 2022 for upgrades to the software for the SCADA system.

Both proposals are attached hereto and incorporated herein by reference as Group Exhibit B.

### **II. Term of Agreement**

The term of this Agreement shall be until March 31, 2023 or until the services as set forth in Exhibit B have been completed, whichever shall occur first.

### **III. Compensation**

#### **A. Basic Fees:**

Fees for these services shall not exceed Three Hundred Twelve Thousand Five Hundred Eighty-five Dollars and No Cents (\$312,585), which includes a 5% contingency. Any additional work performed that will increase the agreement price in excess of this amount must be approved in writing by both parties.

#### **B. Consultant Invoices:**

The Consultant shall prepare invoices that contain a reference number, the billing period, the classifications and/or names of staff, numbers of hours billed to the project (with clear itemization for hours spent), all reimbursable expenses and a total reimbursable amount for the billing period including receipts therefor, amounts billed to date, and amounts received to date.

#### **C. Prompt Payment Act:**

The Village will comply with the Local Government Prompt Payment Act, 50 ILCS 505/1 et seq., in that any bill approved for payment must be paid or the payment issued to the Consultant within 60 days of receipt of a proper bill or invoice. If payment is not issued to the Consultant within this 60 day period, an interest penalty of 1.0% of any amount approved and unpaid shall be added for each month or fraction thereof after the end of this 60 day period, until final payment is made.

The Village shall review in a timely manner each bill or invoice after its receipt. If the Village determines that the bill or invoice contains a defect making it unable to process the payment request, the Village shall notify the Consultant requesting payment as soon as possible after discovering the defect pursuant to rules promulgated under 50 ILCS 505/1 et seq. The notice shall identify the defect and any additional information necessary to correct the defect.

#### **IV. General Terms and Conditions**

##### **A. Relationship Between the Consultant and the Village**

The relationship between the Village and the Consultant is that of a buyer and seller of professional services and it is understood that the parties have not entered into any joint venture or partnership with the other.

##### **B. Equal Employment Opportunity**

In the event of the Consultant's non-compliance with the provisions of this Equal Employment Opportunity Clause, the Illinois Human Rights Act or the Rules and Regulations of the Illinois Department of Human Rights ("Department"), the Consultant may be declared ineligible for future contracts or subcontracts with the State of Illinois or any of its political subdivisions or municipal corporations, and the contract may be canceled or voided in whole or in part, and such other sanctions or penalties may be imposed or remedies invoked as provided by statute or regulation. During the performance of this Agreement, the Consultant agrees as follows:

1. That it will not discriminate against any employee or applicant for employment because of race, color religion, sex, marital status, national origin or ancestry, age, physical or mental handicap unrelated to ability, or an unfavorable discharge from military service; and further that it will examine all job classifications to determine if minority persons or women are underutilized and will take appropriate affirmative action to rectify any such underutilization.
2. That, if it hires additional employees in order to perform this Agreement or any portion thereof, it will determine the availability (in accordance with the Department's Rules and Regulations) of minorities and women in the area(s) from which it may reasonably recruit and it will hire for each job classification for which employees are hired in such a way that minorities and women are not underutilized.
3. That, in all solicitations or advertisements for employees placed by it or on its

behalf, it will state that all applicants will be afforded equal opportunity without discrimination because of race, color, religion, sex, marital status, national origin or ancestry, age, physical or mental handicap unrelated to ability, or an unfavorable discharge from military service.

4. That it will send to each labor organization or representative of workers with which it has or is bound by a collective bargaining or other agreement or understanding, a notice advising such labor organization or representative of the consultant's obligations under the Illinois Human Rights Act and the Department's Rules and Regulations. If any such labor organization or representative fails or refuses to cooperate with the consultant in its efforts to comply with such Act and Rules and Regulations, the consultant will promptly so notify the Department and the contracting agency and will recruit employees from other sources when necessary to fulfill its obligations thereunder.
5. That it will submit reports as required by the Department's Rules and Regulations, furnish all relevant information as may from time to time be requested by the Department or the contracting agency, and in all respects comply with the Illinois Human Rights Act and the Department's Rules and Regulations.
6. That it will permit access to all relevant books, records, accounts and work sites by personnel of the contracting agency and the Department for purposes of investigation to ascertain compliance with the Illinois Human Rights Act and the Department's Rules and Regulations.
7. That it will include verbatim or by reference the provisions of this clause in every subcontract it awards under which any portion of the contract obligations are undertaken or assumed, so that such provisions will be binding upon such subconsultant. In the same manner as with other provisions of this Agreement, the consultant will be liable for compliance with applicable provisions of this clause by such subconsultants; and further it will promptly notify the contracting agency and the Department in the event any subconsultant fails or refuses to comply therewith. In addition, the Consultant will not utilize any subconsultant declared by the Illinois Human Rights Commission to be ineligible for contracts or subcontracts with the State of Illinois or any of its political subdivision or municipal corporations.

### **C. Sexual Harassment**

Consultant, as a party to a public contract, has a written sexual harassment policy that:

1. Notes the illegality of sexual harassment;
2. Sets forth the State law definition of sexual harassment;
3. Describes sexual harassment utilizing examples;
4. Describes the Consultant or supplier's internal complaint process including penalties;
5. Describes the legal recourse, investigative and complaint process available through the Illinois Department of Human Rights and the Human Rights Commission and

- how to contact these entities, and;
6. Describes the protection against retaliation afforded under the Illinois Human Rights Act.

#### **D. Drug Free Work Place**

Consultant, as party to a public contract, certifies and agrees that it will provide a drug free workplace by:

1. Publishing a statement: (1) Notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance, including cannabis, is prohibited in the grantee's or Consultant's workplace. (2) Specifying the actions that will be taken against employees for violations of such prohibition. (3) Notifying the employee that, as a condition of employment on such contract or grant, the employee will: abide by the terms of the statement; and notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.
2. Establishing a drug free awareness program to inform employees about: (1) the dangers of drug abuse in the workplace; (2) the grantee's or consultant's policy of maintaining a drug free workplace; (3) any available drug counseling, rehabilitation, and employee assistance programs; (4) the penalties that may be imposed upon employees for drug violations.
3. Providing a copy of the statement required by subparagraph (1) to each employee engaged in the performance of the contract or grant and to post the statement in a prominent place in the workplace.
4. Notifying the contracting or granting agency within ten (10) days after receiving notice of a criminal drug statute conviction from an employee or otherwise receiving actual notice of such conviction.
5. Imposing a sanction on, or requiring the satisfactory participation in a drug abuse assistance or rehabilitation program by, any employee who is so convicted as required by Section 5 of the Drug Free Workplace Act.
6. Assisting employees in selecting a course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that a trained referral team is in place.
7. Making a good faith effort to continue to maintain a drug free workplace through implementation of the Drug Free Workplace Act.

#### **E. Non-Discrimination**

Consultant, its employees and subconsultants, agree not to commit unlawful discrimination and agree to comply with applicable provisions of the Illinois Human

Rights Act, the Public Works Employment Discrimination Act, the U.S. Civil Rights Act and Section 504 of the Federal Rehabilitation Act, and rules applicable to each. The equal opportunity clause of the Department of Human Rights rules is specifically incorporated herein.

The Americans with Disabilities Act (42 U.S.C. 12101) and the regulations thereunder (28 CFR 35.130)(ADA) prohibit discrimination against persons with disabilities by the State, whether directly or through contractual arrangements, in the provision of any aid, benefit or service. As a condition of receiving this Agreement, the undersigned vendor certifies that services, programs and activities provided under this Agreement are and will continue to be in compliance with the ADA.

#### **F. Campaign Disclosure Certificate**

The Consultant shall comply with the Campaign Disclosure Certificate attached hereto and incorporated herein by reference as Exhibit A.

#### **G. Patriot Act Compliance**

The Consultant represents and warrants to the Village that neither it nor any of its principals, shareholders, members, partners, or affiliates, as applicable, is a person or entity named as a Specially Designated National and Blocked Person (as defined in Presidential Executive Order 13224) and that it is not acting, directly or indirectly, for or on behalf of a Specially Designated National and Blocked Person. The Consultant further represents and warrants to the Village that the Consultant and its principals, shareholders, members, partners, or affiliates, as applicable are not, directly or indirectly, engaged in, and are not facilitating, the transactions contemplated by this Agreement on behalf of any person or entity named as a Specially Designated National and Blocked Person. The Consultant hereby agrees to defend, indemnify and hold harmless the Village, and its elected or appointed officers, employees, agents, representatives, engineers and attorneys, from and against any and all claims, damages, losses, risks, liabilities and expenses (including reasonable attorney's fees and costs) arising from or related to any breach of the foregoing representations and warranties.

#### **H. Cooperation with FOIA Compliance**

Consultant acknowledges that the Freedom of Information Act may apply to public records in possession of the Consultant. Consultant shall cooperate with the Village in its efforts to comply with the Freedom of Information Act. 5 ILCS 140/1 et.seq.

#### **I. Copyright or Patent Infringement**

The Consultant agrees to indemnify, defend, and hold harmless the Village against any suit, claim, or proceeding brought against the Village for alleged use of any equipment, systems, or services provided by the Consultant that constitutes a misuse of any proprietary or trade secret information or an infringement of any patent or



copyright.

## **J. Standard of Care**

Services performed by Consultant under this Agreement will be conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representations express or implied, and no warranty or guarantee is included or intended in this Agreement, or in any report, opinions, and documents or otherwise.

If the Consultant fails to meet the foregoing standard, Consultant will perform at its own cost, and without reimbursement from the Village, the professional services necessary to correct errors and omissions caused by Consultant's failure to comply with the above standard and reported to Consultant within one (1) year from the completion of Consultant's services for the Project.

## **V. Insurance and Indemnification of the Village**

### **A. Insurance**

The Consultant shall be required to obtain, from a company or companies lawfully authorized to do business in the jurisdiction in which the project is located, such general liability insurance which, at a minimum, will protect the Consultant from the types of claims set forth below which may arise out of or result from the Consultant's operations under this Contract and for which the Consultant may legally liable:

Claims under workers compensation, disability benefit and other similar employee benefit acts which are applicable to the operation to be performed;

Claims for damages resulting from bodily injury, occupational sickness or disease, or death of the Consultant's employees;

Claims for damages resulting from bodily injury, sickness or disease, or death of any person other than the Consultant's employees;

Claims for damages insured by the usual personal injury liability coverage which are sustained: (1) by a person as a result of an offense directly or indirectly related to employment of such person by the Consultant, or (2) by another person;

Claims for damages, other than to the work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;

Claims for damages as a result of professional or any other type of negligent

action by the Consultant or failure to properly perform services under the scope of the agreement between the Consultant and the Village.

The Consultant shall demonstrate having insurance coverage for a minimum of \$2 million for professional liability (errors and omissions).

As evidence of said coverages, Consultant shall provide the Village with certificates of insurance naming the Village of Downers Grove as an additional insured and include a provision for cancellation only upon at least 30 days prior notice to the Village.

## **B. Indemnification**

The Consultant will indemnify and hold harmless the Village and its officers, employees and agents from any and all liability, losses or damages the Village may suffer as a result of claims, demands, suits, actions or proceedings of any kind or nature in any way resulting from or arising out of negligent action on the part of the Consultant under this Agreement. This indemnification does not apply to liability caused by the Village's own negligence. The paragraph survives the termination/expiration of this Agreement.

## **VI. Miscellaneous Provisions**

### **A. Termination**

In the event of the Consultant's nonperformance, breach of the terms of the Agreement, or for any other reason, including that sufficient funds to complete this Agreement are not appropriated by the Village, the Agreement may be canceled, in whole or in part, upon the Village's written notice to the Consultant. The Village will pay the Consultant's costs actually incurred as of the date of receipt of notice of termination. Upon termination, the Consultant will deliver all documents and products of whatever kind, and their reproducible originals related to the project, which have been produced to the date of the notice of termination.

### **B. Governing Law**

This Agreement will be governed by and construed in accordance with the laws of the State of Illinois. Venue is proper only in the County of DuPage.

### **C. Successors and Assigns**

The terms of this Agreement will be binding upon and inure to the benefit of the parties and their respective successors and assigns; provided, however, that neither party will assign this Agreement in whole or in part without the prior written approval of the other.

### **D. Waiver of Contract Breach**

The waiver by one party of any breach of this Agreement or the failure of one party to

enforce at any time, or for any period of time, any of the provisions hereof will be limited to the particular instance and will not operate or be deemed to waive any future breaches of this Agreement and will not be construed to be a waiver of any provision except for the particular instance.

#### **E. Amendment**

This Agreement will not be subject to amendment unless made in writing and signed by all parties.

#### **F. Severability of Invalid Provisions**

If any provisions of this Agreement are held to contravene or be invalid under the laws of any state, country or jurisdiction, contravention will not invalidate the entire Agreement, but it will be construed as if not containing the invalid provision and the rights or obligations of the parties will be construed and enforced accordingly.

#### **G. Assignment**

The Consultant will not assign or subcontract any portion of this Agreement, unless the Village agrees to the assignment or subcontract in writing. Any assignment will not relieve the Consultant from its obligations or change the terms of this Agreement.

#### **H. Notice**

Any notice will be in writing and will be deemed to be effectively served when deposited in the mail with sufficient first class postage affixed, and addressed to the party at the party's place of business. Notices shall be addressed to designated representatives of both parties as follows:

**Village Manager  
Village of Downers Grove  
801 Burlington Ave.  
Downers Grove, IL 60515**

Concentric Integration  
8678 Ridgefield Road  
Crystal Lake, IL 60012

#### **I. Village Ordinances**

The Consultant will strictly comply with all ordinances of the Village of Downers Grove and laws of the State of Illinois.

#### **J. Use of Village's Name**

The Consultant is specifically denied the right of using in any form or medium the name

of the Village for public advertising unless express permission is granted by the Village.

IN WITNESS WHEREOF, the Parties have executed this Agreement on the date indicated above.

**Concentric Integration**

**Village of Downers Grove**

By: Michael D. Klein

By: \_\_\_\_\_

Title: President

Title: \_\_\_\_\_

Date: 5/6/2022

Date: \_\_\_\_\_

**Exhibit A**  
**Campaign Disclosure Certificate**

The Campaign Disclosure Certificate is required pursuant to the Village of Downers Grove Council Policy on Ethical Standards and is applicable to those campaign contributions made to any member of the Village Council.

Said Campaign Disclosure Certificate requires any individual or entity bidding to disclose campaign contributions, as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4), made to current members of the Village Council within the five (5) year period preceding the date of the bid or proposal release.

By signing this Agreement, Consultant agrees to refrain from making any campaign contributions as defined in Section 9-1.4 of the Election Code (10 ILCS 5/9-1.4) to any Village Council member and any challengers seeking to serve as a member of the Downers Grove Village Council.

\_\_\_\_\_  
Under penalty of perjury, I declare:

- Consultant has not contributed to any elected Village position within the last five (5) years.

Michael D. Klein  
Signature

Michael D. Klein  
Print Name

- Consultant has contributed a campaign contribution to a current member of the Village Council within the last five (5) years.

Print the following information:

Name of Contributor: \_\_\_\_\_  
(company or individual)

To whom contribution was made: \_\_\_\_\_

Year contribution made: \_\_\_\_\_ Amount: \$ \_\_\_\_\_

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Print Name



## Project Proposal

April 4, 2022

Mr. David Moody  
Assistant Director of Public Works - Operations  
Village of Downers Grove  
5101 Walnut Avenue  
Downers Grove, IL 60515

Subject: Storm Station SCADA Improvements

Concentric Project Number: 220261.50

Dear Mr. Moody:

The Village of Downers Grove currently owns, operates, and maintains three storm stations. All three storm stations are currently integrated into the Village's SCADA system to provide remote site monitoring of the stations. Concentric Integration conducted a systemwide SCADA assessment in 2021, which included the Village's storm station sites. The goal of the assessment was to document the current state of the Village's SCADA system and make recommendations for improvements. The assessment found the storm stations to be in various states of disrepair, and currently do not operate as intended. The cellular routers installed at each storm station site are also obsolete.

This project consists of implementing the recommendations made in the assessment report, which consist of the following:

- Replace the obsolete cellular routers with a modern, modular based cellular router solution.
- Establish a private cellular network on the Verizon's Private Responder Core.
- Install new radar level transmitter at Hill & Grand Storm Station for improved monitoring of the creek water level.
- Remove existing Pump Control and SCADA Panels at Florence and Ogden and replace with new traffic box style enclosure containing all new control equipment.
- At the Denburn Woods station, install harmonic mitigation equipment to reduce harmonic frequencies generated by the Variable Frequency Drive (VFD) installed with the pump control panel. Install new radar level transmitter for improve wet well monitoring.

Additional details regarding the SCADA assessment and recommendations can be found in the SCADA assessment report.

Concentric Integration greatly appreciates the opportunity to propose the following Scope of Services to improve the Village's storm stations and look forward to the possibility of working together on this project.





## Scope of Services - General

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### *Labor*

#### Project Management

1. Plan, schedule, and coordinate the activities required to complete the Project.
2. Coordinate an onsite kickoff meeting at Public Works prior to start of work.
3. Provide bi-weekly project status updates via email and discuss status with the Customer's Project Manager as needed.
4. Manage a punch-list upon the last task of the project.
  - a. The Village will be responsible providing punch-list items to Concentric's Project Manager
  - b. Punchlist will be agreed up between Concentric's and the Village's Project Manager(s) one week after the last task of the project.

## Scope of Services – Storm Station Cellular Router Replacement

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### *Equipment*

Concentric will provide the following equipment:

Equipment	Quantity
Cisco P-LTE-VZ CAT4 LTE Pluggable Component	4
Cisco SL-IR1101-NA Network Advantage ICS	4
Cisco IR1101-A-K9 Cellular Router	4
Cisco CON-SNTP-IR1101AK Cellular Router SMARTnet	4
Cisco IR1101-DINRAIL Mounting Bracket	4
Mobile Mark LTM3013C3C00BLK18 Antenna, MIMO	4
Terrawave Solutions TW-LP-SMA-J-BHJ Lightning Arrestor	6
Ventev LMR195SMSM-6 Coax Jumper	6

Concentric will also provide any miscellaneous control panel components (Patch cables, wire, mounting hardware, etc.) as required for a complete installation.





The Village is responsible for the following hardware:

Equipment	Quantity
Verizon SIM cards (provided by Verizon under direction of the Village), 1GB data plan	4
Verizon SIM card (provided by Verizon under direction of the Village), Unlimited data plan for Hill & Grand surveillance camera	1

### **Labor**

#### Cellular Router Installation

1. Coordinate with Verizon Wireless to provision a Private Machine-to-Machine network under the Village of Downers Grove's ownership.
2. Concentric will provide, configure, and install a Cisco IR1101A cellular router at each Storm Station site and Public Works.
  - a. The existing CalAmp cellular routers will be removed and given to the Village for disposal.
  - b. The SIM cards installed in the above Cisco cellular routers will be assigned to the Village of Downers Grove's Verizon account.
3. Concentric will provide and install MIMO antennas, with built-in diversity, at each Storm Station site and Public Works.
4. Confirm each Storm Station site successfully communicates back to SCADA.

#### Documentation

1. Provide via USB flash drive or secure electronic file-share using Microsoft OneDrive, or similar, electronic copies of the following:
  - a. An updated network diagram, detailing the SCADA network with new cellular network and routers
  - b. Router configuration files

## Scope of Services – Hill & Grand Storm Station SCADA Improvements

### **Equipment**

Concentric will provide the following equipment:

Equipment	Quantity
Vega PSC22.XXXXXNCHB Wired Radar Sensor for Level Measurement	1







Equipment	Quantity
Vega Adjustable Mounting Bracket for Radar Sensor	1
Citel DLA-24D3 24Vdc Surge Suppressor	1
Verkada CD42-256E-HW Camera with one (1) year camera license	1
Verkada INJ-POE-PLUS 802.3at PoE Injector	1
Verkada ACC-MNT-8 Pendant Cap Mount Kit	1
Cisco P-LTE-VZ CAT4 LTE Pluggable Component	1
Cisco SL-IR1101-NA Network Advantage ICS	1
Cisco IR1101-A-K9 Cellular Router	1
Cisco CON-SNTP-IR1101AK Cellular Router SMARTnet	1
Cisco IR1101-DINRAIL Mounting Bracket	1
Mobile Mark LTM3013C3C00BLK18 Antenna, MIMO	1
Terrawave Solutions TW-LP-SMA-J-BHJ Lightning Arrestor	2
Ventev LMR195SMSM-6 Coax Jumper	2

### **Labor**

#### Radar Level Sensor

1. Provide and configure new radar level sensor to accurately measure creek water level.
  - a. The Village will be responsible for removal of existing ultrasonic level sensor and physical installation of the new radar level sensor on the existing lighting pole.
  - b. Concentric will remove the existing ultrasonic level transmitter and terminate new radar level sensor within SCADA panel.
2. Reconfigure analog scaling within the storm station PLC to accurately read new radar level sensor.
3. Add creek water level feedback to MicroLogix 1400 display.
4. Confirm creek water level feedback displays properly in SCADA.

#### Camera

1. Provide and configure a Verkada outdoor dome camera with 256GB (30 days) of onboard storage. Live and historical video footage will be accessible through Command, Verkada's web-based platform.
  - a. The Village will be responsible for removal of the existing Axis Camera and physical installation of the new dome camera.
2. Provide, install, and configure a Cisco IR1101A cellular router dedicated for the surveillance camera footage.





### Documentation

1. Provide via USB flash drive or secure electronic file-share using Microsoft OneDrive, or similar, electronic copies of the following:
  - a. Radar level sensor configuration
  - b. Updated PLC Program
  - c. As-built control panel drawings showing new radar level sensor

## Scope of Services – Florence & Ogden Storm Station Improvements

### **Equipment**

Concentric will provide the following equipment as a completely fabricated panel with components factory-mounted and wired inside the enclosure:

Equipment	Quantity
Saginaw SCE-42EL4212WFLP 2 Door Dual 3PL 42x42x12 Nema 3R/4 Enclosure	1
Saginaw SCE-42P42 42x42 Subpanel	1
Saginaw SCE-DF42EL21LP Panel, Dead Front (Wall Mount) 38x17.7 - For inner door	2
Saginaw SCE-DS42N4 Drip Shield	1
Saginaw SCE-DSTOPK Door Stop Kit	2
Saginaw SCE-LF1824VDC Fixture, LED Light 24VDC	2
Saginaw SCE-LSA Assembly, Light Switch	2
Thermal management system consisting of heating and cooling.	1
Allen-Bradley 25B-A2P5N104 PowerFlex 525 AC 0.5 HP Drive or Equal	2
Line Reactor for Variable Frequency Drives	2
Allen-Bradley Motor Circuit Breaker or Equal	2
Temperature & Humidity Sensor for Enclosure	1
APC SMT1000C SmartUPS, 1000VA	1
Allen-Bradley 1769-L24ER-QBFC1B CompactLogix 5370 L2 PLC	1
Allen-Bradley 2711P-T6C21D8S PanelView Plus 7 Standard Terminal, Touch Screen, 5.7 inches	1
Allen-Bradley 1606-XLE240EN Power Supply, 24 VDC, 240W	2
Allen-Bradley 1606-XLPRED Redundancy Module	1
Allen-Bradley 1783-US5T 5 Port Unmanaged Network Switch	1
Vega PSC22.VHWXXNCHB Wired Radar Sensor for Level Measurement	1
Vega Adjustable Mounting Bracket for Radar Sensor	1



Equipment	Quantity
PR Electronics 9106B1A Intrinsic Barrier, active, HART transparent	1
PR Electronics 4501 Display	1

Concentric will also provide any miscellaneous control panel components (Patch cables, wire, mounting hardware, etc.) as required for a complete installation.

### **Labor**

#### Pump Control Panel

1. Design and provide new pump control panel with integrated VFD pump controls for the two storm station pumps.
  - a. The proposed pump control panel design will replace the existing pump control panel and existing SCADA panel.
  - b. Village to provide new submersible pumps for the storm station. Concentric to coordinate pump horsepower and amp rating with Village before ordering variable frequency drives.
2. Develop control panel drawings detailing the new pump control panel.
  - a. Design all operator interface components (switches, pushbuttons and pilot lights) on inner doors.
  - b. Use panel lighting door switches as both lighting activation and intrusion detection.
3. Integrate new radar level sensor for level control.

#### Programming

1. Provide and program an Allen-Bradley CompactLogix programmable logic controller (PLC) to monitor and control the storm station:
  - a. Each pump will have an operator adjustable wet well level setpoint to start and stop the pump.
  - b. Add drawdown command to pump down wet well level after a storm event.
  - c. Add pump exercise schedule to briefly run each pump between storm events.
2. Provide and program an Allen-Bradley PanelView Plus 7 operator interface terminal (OIT) to view station status and locally adjust station setpoints, including the following:
  - a. Wet well level, pump runtime and starts, and VFD energy feedback (Voltage, Current, Power)
  - b. Wet well level and VFD energy historical trends
  - c. Current and historical alarms
  - d. Operator adjustable setpoints for starting/stopping each pump
3. Develop SCADA graphics to monitor and control the station with the same information above





- a. Add alarms in SCADA to notify Village staff in the event an alarm conditions occurs.

### Installation

1. Subcontract Cygnet Controls, Inc., or other qualified panel builder, to fabricate the new storm station enclosure and pump control panel.
2. Subcontract a reputable local electrical contractor to remove the existing pump control panel and SCADA panels, and install the new storm station enclosure, including the following:
  - a. Install new control panel on unistrut support rack.
  - b. Wire utility power and pump power leads within the pump control panel.
  - c. Install radar level sensor and run wiring back to pump control panel.
3. Concentric will terminate instrument field wiring within the pump control panel.

### Commissioning

1. Verify storm station operation and document results with Field Device Test Report.

### Documentation

1. Provide via USB flash drive or secure electronic file-share using Microsoft OneDrive, or similar, electronic copies of the following:
  - a. Signed Field Device Test Report
  - b. Control panel drawings of new pump control panel
  - c. An updated network diagram, detailing the SCADA network
  - d. PLC and OIT Programs

## Scope of Services – Denburn Woods Storm Station Improvements

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### **Equipment**

Concentric will provide the following equipment:

Equipment	Quantity
Vega PSC22.VHWXXNCHB Wired Radar Sensor for Level Measurement	1
Vega Adjustable Mounting Bracket for Radar Sensor	1
PR Electronics 9106B1A Intrinsic Barrier, active, HART transparent	1
PR Electronics 4501 Display	1
Square D HEPD80 Surge protection device, 80kA, 120/240V 1ph	1



Equipment	Quantity
Square D QO230 Mini circuit breaker, QO, 30A, 2 pole, 120/240 VAC, 10 kA, Plug-in Mount	1
Square D VZ1L018UM20 Line choke, 2 mH, 18 A, 1 phase for Variable Speed Drive	1

Concentric will also provide any miscellaneous control panel components (Patch cables, wire, mounting hardware, etc.) as required for a complete installation.

#### Radar Level Sensor

1. Provide and configure new radar level sensor to accurately measure the wet well water level:
  - a. The Village will be responsible for physical installation of the new radar level sensor within the wet well and run wiring back to the SCADA panel.
  - b. Concentric will terminate field wiring within the SCADA panel.

#### Programming

1. Modify existing Micrologix 1400 PLC programming to integrate new radar level sensor. The radar level sensor will be the primary means of controlling the wet well level. In the event the radar level transducer fails, or the high float is tripped, the station will enter Float Backup Mode. The station will remain in Float Backup Mode until manually reset.
  - a. Create SCADA graphics to display wet well level
2. Add drawdown command to pump down wet well level after a storm event.
3. Add pump exercise schedule to briefly run the pump between storm events.

#### Installation

1. Provide, install, and wire intrinsic barrier within SCADA panel for radar level sensor.
2. Provide, install, and wire surge protection device and line choke for existing VFD within pump control panel.

#### Commissioning

1. Confirm successful operation of the functionality above and document results with Field Device Test Report.





### Documentation

1. Provide via USB flash drive or secure electronic file-share using Microsoft OneDrive, or similar, electronic copies of the following:
  - a. Signed Field Device Test Report
  - b. As-built SCADA control panel drawings
  - c. PLC Programs

### Fee

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**Our fee for the above scope is a lump sum of \$118,000**

The above fee includes a **\$10,000** cash allowance for as needed electrical contractor services for the Florence & Ogden Storm Station Improvements. The final fee will be adjusted based on actual cost for this service.

This proposal is valid for 90 days from the date issued.

### Concentric Assumptions / Customer Responsibilities

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1. Customer will assign an initial project manager at the project kickoff meeting.
2. Customer will provide site access for installation, programming, and startup during Customer's normal business hours. Work outside of Customer's normal business hours can be agreed upon as needed, provided Concentric can secure the site(s) upon departure.
3. Customer understands that all existing equipment to remain is assumed to be in good, working order. In the event that any other equipment does not perform as-expected, Concentric will work with the Customer to repair, as-needed, under a separate contract.
4. Customer will dispose of/recycle any removed equipment.
5. Customer understands that software/materials purchased outside Concentric may require regular support, and it will coordinate directly with the manufacturer to identify support costs for future budgeting purposes.

### Annual Support

---

This project will add additional hardware and software to the Customer, some of which has support or maintenance associated with it. Concentric recommends the Customer maintain any applicable support agreements once the initial support/warranty periods expire. On this project, we have included the following support agreements, that all begin approximately at the date the product is shipped (not necessarily the date it is onsite) and last for periods varying from one year to three years.





Following is the recommended support and estimated amounts for annual renewals (this is provided solely for budgetary purposes and will need to be quoted at the time of renewal):

Description	Annual Renewal
Cisco SMARTnet for Cellular Routers (per device)	\$180
Verkada 1-year Camera License	\$120
<b>Total</b>	<b>\$ 300</b>

Manufacturer standard warranty on all other hardware

## Project Schedule

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Our estimated project schedule will be agreed upon at the project kickoff meeting.

## Warranty

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The warranty listed in the Terms and Conditions (Paragraph J): (the remaining terms and conditions do not apply)

- DOES apply
- DOES NOT apply





## Acceptance

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If this proposal is acceptable, please sign one copy and return to us. Feel free to contact me if you have any questions.

Sincerely,

CONCENTRIC INTEGRATION, LLC

Michael D. Klein, PE  
President  
MDK/RRO

CUSTOMER:  
VILLAGE OF DOWNERS GROVE

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## Project Proposal

March 31, 2022

Mr. David Moody  
Assistant Director of Public Works - Operations  
Village of Downers Grove  
5101 Walnut Avenue  
Downers Grove, IL 60515

Subject: SCADA Platform Migration

Concentric Project Number: 212120.50

Dear Mr. Moody:

The Village of Downers Grove's existing SCADA system provides remote site monitoring and some limited control of the Village's six (6) Rate Stations, seven (7) Elevated Storage Tanks, and three (3) Storm Water Collection Stations. Concentric Integration recently conducted a systemwide SCADA assessment for the Village where the goals were to:

- Document the current state of the Village's SCADA system
- Provide recommendations for areas of improvement

Our assessment identified that the Village's SCADA software version (GE's iFix) is now outdated and has limited support from the software developer. The SCADA graphics developed for the Village do not offer Water staff the ability to control the system as desired and do not incorporate High Performance HMI design (standardized and easy to use). In addition, the SCADA server is also running Microsoft Windows Server 2012 R2 as its operating system. Microsoft will end support for Windows Server 2012 Server in October 2023 which means that it will no longer receive critical cybersecurity updates.

The assessment also found the Village is not satisfied with how the rate stations currently operate and they are having a difficult time controlling them.

Concentric is proposing a project consisting of the recommendations made in the assessment report as follows:

- Replace the existing SCADA software platform with Inductive Automation's Ignition Perspective SCADA platform.
- Re-develop the SCADA graphics using High Performance Graphic methodologies.
- Replace the end-of-life SCADA firewall with a FortiGate firewall with next generation features to enhance cybersecurity specific to Industrial Control Systems.
- Re-develop the PLC programming at each Rate Station to a centralized and coordinated control structure.





Additional details regarding the SCADA assessment and recommendations can be found in the SCADA assessment report.

Concentric Integration greatly appreciates the opportunity to propose the following Scope of Services to improve the Village's SCADA system.

## Scope of Services

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### *Equipment*

Concentric will provide the following hardware / software:

Equipment	Quantity
Dell R450 PowerEdge Server with VMware vSphere 7 Standard Capable of running four (4) virtual servers	1
Microsoft Windows Server 2019 Standard Licenses (licensed based on cores)	16
Microsoft SQL 2019 Standard License	1
Microsoft SQL User CALs	10
Inductive Automation Licensing: Ignition Unlimited Perspective Module, Tag Historian Module, Reporting Module, Alarming Module, SMS Module, and Voice Module.	1
Inductive Automation: One (1) year of Ignition BasicCare	1
Fortinet FortiGate FG-61F Network Security/Firewall Appliance - 1 Year FortiCare 24 X 7 Support + FortiGuard Enterprise	1
Fortinet FortiCare Service - 24 x 7 x 4 Hour - Service Depot - Exchange - Parts	1
Rackmount RM-FR-T10 Rack mount kit for FortiGate FG-61F	1
Sierra Wireless RV50X Cellular Router for Ignition SMS Gateway	1
Sierra Wireless AC Adaptor	1
Sierra Wireless 6001110 Paddle Antennas	2
Sensaphone Sentinel cellular alarm dialer with one year of service	1

Concentric will also provide any miscellaneous control panel components (Patch cables, wire, mounting hardware, etc.) as required for a complete installation.

### **The Village is responsible for the following hardware:**

Equipment	Quantity
Verizon SIM card (provided by Verizon under direction of the Village) for SMS Gateway	1





## *Labor*

### *Project Management*

1. Plan, schedule, and coordinate the activities required to complete the Project.
2. Coordinate an onsite kickoff meeting at Public Works prior to start of work.
3. Provide bi-weekly project status updates via email and discuss status with Customer's Client Manager as needed.
4. Conduct an onsite Graphics Standards discussion to review proposed graphic design.
5. Coordinate with the Village's IT Department as it relates to the project.
6. Manage a punch-list upon the last task of the project.
  - a. The Village's Project Manager will be responsible for providing punch-list items to Concentric's Project Manager.
  - b. Punchlist will be agreed up between Concentric's and the Village's Project Manager(s) one week after the last task of the project.

### *SCADA Server and Networking Infrastructure*

1. Provide and provision the following virtual Windows Servers on a dedicated virtual host server:
  - a. SCADA Server (SCADA platform application)
  - b. SCADA Historian (Database for trending and analytics)
  - c. SCADA Active Directory (for security and authentication)
2. Provide, install, and configure one (1) Fortinet FortiGate FG-61F Firewall and configure Industrial cybersecurity protocols for SCADA network traffic.
  - a. Leverage the Village's existing VPN solution for remote SCADA access.
3. Provide, install, and configure one (1) Sierra Wireless RV50X to serve as the SMS gateway for SCADA text alerts.
4. The new SCADA server and firewall will be mounted within the Village's existing server rack at Public Works. If adequate server rack space is unavailable, Concentric can provide a separate quote for an additional server rack.
5. Upon completion of this project, the Village of Downers Grove will have full ownership of the SCADA server and data within. Concentric can provide a separate maintenance support contract to assist the Village in maintaining their SCADA system.

### *SCADA Server Software*

1. Configure new virtual SCADA server with Ignition SCADA software application:





- a. Configure Ignition's Allen-Bradley device driver to communicate and poll information from the Master Polling PLC.
- b. Configure datapoints (tags) in Ignition to maintain existing monitoring and control provided within the existing iFix SCADA system.
2. Migrate existing SQL reports into the Ignition reporting module:
  - a. Monthly Operations & Chemical Feed Report
  - b. Monthly Water Maintenance Report
  - c. IEPA Monthly Summary Report
3. Migrate the existing alarms configured in the existing Win911 application into Ignition:
  - a. Coordinate with the Village to create alarm pipelines within the Ignition platform to notify Village staff according to the Village's desired call out roster.
  - b. Configure Ignition to connect to the existing Yeastar for phone-call alarm notifications.
  - c. Configure Ignition to generate SMS text messages when an alarm condition occurs. Operators will have the capability to acknowledge the alarm(s) by sending an acknowledgment code back to Ignition via text message.
4. Configure the Ignition platform to integrate with the SCADA Active Directory for SCADA user management.

#### SCADA Historian

1. Configure new virtual SCADA Historian using Microsoft SQL database:
  - a. Install and configure Microsoft SQL 2019 on the SCADA Historian. The Ignition SCADA software will automatically generate the appropriate databases within SQL to store historical data.
  - b. Install and configure Microsoft SQL database connector within Ignition.
2. Historize datapoints with Ignition to provide the same historical data logging configure within the existing iFix historian application.
3. Coordinate with the Village to setup a data retention policy for historical data. Historical data may be pruned after a designated amount of time to maximize SCADA historian storage space.

#### SCADA Graphic Development

1. Concentric recommends developing SCADA graphics using High Performance HMI graphic standards. High performance graphics emphasizes situational awareness, displaying critical data strategically to make quick decisions regarding the process. Below are some High Performance HMI standards Concentric recommends implementing:





- a. Analog values, such as flow rates, pressures, tank levels, etc., will be visualized graphically and numerically. Graphical depictions of analog process values allow users to glance at SCADA and visually see whether the value falls within an acceptable range. It also provides benefit to see when a value is about to go into a warning or alarm condition, enabling users to change the process before an alarm condition occurs.
  - b. When values do fall outside the acceptable range, that graphics will alert users three ways: change of color, text stating the condition, and a visible warning or alarm symbol.
  - c. High performance graphics omit using unnecessary animated graphics, pictures as backgrounds, and inconsistent color-coding that can distract users.
  - d. The color scheme within the graphics will limit the use of color. Color will be specifically used and be consistent in definition. The colors selected will also consider colorblindness.
  - e. Graphic displays will follow a four-tier hierarchy:
    - Level 1: Overview of the entire system with only critical KPI's shown
    - Level 2: Process specific overview with trends show past process behavior
    - Level 3: Specific sub-process or site data displayed
    - Level 4: Pop-window with capabilities to control the sub-process of site
2. A desktop and mobile version of the SCADA graphics will be developed in Ignition:
    - a. The desktop version will be accessible via web browser. Graphics will scale accordingly to fit various screen sizes.
    - b. The mobile version will be accessed via the Ignition Perspective mobile application and optimized for user on smaller devices.
    - c. Both desktop and mobile version will be accessed remotely through the Village's SCADA VPN (Virtual Private Network) connection.
  3. Users will also be assigned a security level, limiting them to certain SCADA functionality and/or specific graphics.
  4. Provide visibility and control for the datapoints currently in the Village's existing SCADA system. The datapoints will be reformatted to adhere to the High-Performance graphics standards mentioned above in Ignition.
  5. SCADA graphics will adhere to the agreed upon styles and elements in the Graphics Standards Meeting. Graphics will undergo an internal review process before presented to the Village. The Village will then have an opportunity to review the graphics and provide one round of comments for changes. Once the comments from the Village are implemented, the graphics will be published and considered final. Additional modifications to the graphics, after the initial round of comments, may be provided outside this contract on a T&M basis.





### Hardware Alarm Dialer

1. Provide, configure, and install a Sensaphone cellular alarm dialer to serve as a backup alarm notification system. The hardware alarm dialer will notify Village Staff if the following alarm conditions occur:
  - a. The Ignition SCADA platform is not operational.
  - b. An alarm goes unacknowledged after two cycles of the Ignition call out roster.
2. Wire the cellular alarm dialer inputs to the relay outputs of the existing MTU PLC at Public Works.

### Rate Station Programming Improvements

1. Redevelop the PLC programming at each of the Village's Rate Stations to a centralized and coordinated control scheme with the following functionality:
  - a. Elevated Tank Control Mode – Each rate station would be assigned a controlling Tank and modulate the flow rate based on the controlling Tank level. When the controlling tank falls to a "Tank Fill" level, the Rate Station would increase its flow rate to a pre-defined "Tank Fill" flow setpoint. When the controlling tank rises to a "Tank Full" level, the Rate Station would decrease its flow rate to a pre-defined "Circulate" flow setpoint. In the event a communication failure occurs, the rate stations will automatically switch to Pressure Control Mode.
  - b. Flow Control Mode – Retain the operator adjustable flow rate setpoint for each rate station. The rate station flow rate will modulate to maintain the desired flow rate.
  - c. Pressure Control Mode – Retain operator adjustable system pressure setpoint for each rate station. The rate station flow rate will modulate to maintain the desired system pressure.
2. Maintain existing alarms for each Rate Station.
3. Add the above operator adjustable setpoints into SCADA.

### Training

1. Provide training for Village Staff on using the new SCADA system.

### Documentation

1. Provide via USB flash drive or secure electronic file-share using Microsoft OneDrive, or similar, electronic copies of the following:
  - a. An updated network diagram, detailing the new SCADA system
  - b. PLC programs
  - c. Ignition SCADA backup





## Fee

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**Our fee for the above scope is a lump sum of \$179,700.**

This proposal is valid for 90 days from the date issued.

## Concentric Assumptions / Customer Responsibilities

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1. Customer will assign an initial project manager at the project kickoff meeting.
2. Customer will provide site access for installation, programming, and startup during Customer's normal business hours. Work outside of Customer's normal business hours can be agreed upon as needed, provided Concentric can secure the site(s) upon departure.
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4. Customer will dispose of/recycle any removed equipment.
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## Annual Support

---

This project will add additional hardware and software to the Customer, some of which has support or maintenance associated with it. Concentric recommends the Customer maintain any applicable support agreements once the initial support/warranty periods expire. On this project, we have included the following support agreements, that all begin approximately at the date the product is shipped (not necessarily the date it is onsite) and last for periods varying from one year to three years.

Following is the recommended support and estimated amounts for annual renewals (this is provided solely for budgetary purposes and will need to be quoted at the time of renewal):

Description	Annual Renewal
Ignition BasicCare	\$2,900
Fortinet FortiCare and Enterprise Protection	\$1,285
Sensaphone cellular dialer subscription	\$300
<b>Total</b>	<b>\$4,485</b>

Manufacturer standard warranty on all other hardware





## Project Schedule

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Our estimated project schedule will be agreed upon at the project kickoff meeting.

## Warranty

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The warranty listed in the Terms and Conditions (Paragraph J)(the remaining terms and conditions do not apply)

- DOES apply
- DOES NOT apply







## Acceptance

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If this proposal is acceptable, please sign one copy and return to us. Feel free to contact me if you have any questions.

Sincerely,

CONCENTRIC INTEGRATION, LLC

A handwritten signature in black ink that reads "Michael D. Klein".

Michael D. Klein, PE  
President  
MDK/RRO

CUSTOMER:  
VILLAGE OF DOWNERS GROVE

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