MEETING LOCATION: West County Wastewater District
Alfred M. Granzella Board Room
2910 Hilltop Drive, Richmond, CA 94806
Telephone No. (510) 222-6700 Fax No. (510) 222-3277
Website: www.wcwd.org

*Members of the public may inspect the agenda and supporting documents at this location*

DIRECTORS: David Alvarado (WCWD), Nathaniel Bates (COR),
Eduardo Martinez (COR), Harry Wiener (WCWD)

ALTERNATES: Demnlus Johnson (COR), Sherry Stanley (WCWD)

1. **CALL TO ORDER**
   a. Roll Call
   b. Pledge of Allegiance or Observation of Moment of Silence

2. **APPROVAL OF AGENDA ORDER**

3. **INTRODUCTION OF WEST COUNTY WASTEWATER DISTRICT STAFF**
   a. Introduction of Deputy General Manager Andrew Clough, Administrative Services Department Manager Justin Lovell, Infrastructure and Planning Department Manager Michael Savannah and Water Quality and Resource Recovery Department Manager Aaron Winer

4. **PUBLIC COMMENTS**

5. **CONSENT CALENDAR**
   a. Minutes
      Recommendation: Approve the Minutes for the meeting of June 20, 2019.

6. **ACTION CALENDAR**
   a. Purchasing Authority
      Recommendation: Adopt a Resolution authorizing the Agency Manager to procure goods and services to the same extent authorized by the Managing Agency’s Purchasing Policy.
b. Cleaning and Inspection of Joint Marine Outfall  
Recommendation: Adopt a Resolution authorizing the General Manager to execute a Contract with Global Diving and Salvage, Inc. in an amount not to exceed $82,700 for cleaning and inspection of the Joint Marine Outfall.

c. Moscad Radio System Upgrade  
Recommendation: Adopt a Resolution authorizing the General Manager to execute a contract with Cascade Integration and Development, Inc. in an amount not to exceed $44,112 to upgrade the Motorola Moscad Radio Based Control System and amending the Budget for Fiscal Year 2020 to provide funding.

7. BOARD REPORTS  
a. Reports from Board Members on issues pertaining to the overall operations of the West County Agency

8. INFORMATION REPORTS  
a. Capital Projects  
Recommendation: Receive an Update on the Capital Projects for the Joint Facilities

b. Joint Powers Authority Agreement  
Recommendation: Receive an Update on the discussions regarding proposed revisions to the Joint Powers Authority (JPA) Agreement

c. General Manager/Attorney/Staff Reports  
Recommendation: Receive oral reports from the General Manager, Board Attorney and staff on issues pertaining to the overall operations of the West County Agency

9. GOOD OF THE ORDER/FUTURE AGENDA ITEMS

10. ADJOURNMENT
INFORMATION FOR THE PUBLIC

1. Persons with disabilities who require auxiliary aids or services in attending or participating in this meeting should call the Administration Supervisor at (510) 222-6700 at least one (1) business day before the meeting so necessary accommodations can be made available.

2. Board meetings can be viewed or heard live at www.wcwdca.iqm2.com.

3. Persons who wish to add an item to an agenda must submit the final documentation at least seven (7) business days before the meeting. The Agency retains the right to add items to the agenda.

4. If you challenge a decision of the Agency Board of Directors in court, you may be limited to raising only those issues you or someone else raised at the meeting or in written correspondence delivered at or prior to the meeting. Actions challenging Agency Board decisions are subject to the time limitations contained in Code of Civil Procedure Section 1094.6.

   As a courtesy, please silence your cell phones during the meeting
The meeting of the West County Agency Board of Directors was held in the West County Wastewater District Alfred M. Granzella Board Room, 2910 Hilltop Drive, Richmond, California.

The meeting was called to order at 10:05 a.m. by Director Wiener.

1. **ROLL CALL**

Roll call was taken and the following members were present:

- Harry Wiener ....................... Director - WCWD
- David Alvarado ..................... Director Alternate WCWD
- Eduardo Martinez .................. Director - COR
- Nathaniel Bates .................... Director Alternate COR
- Alfred Cabral ........................ Agency Board Attorney

Also in attendance were Agency Manager Lisa Malek-Zadeh, City of Richmond (COR) Wastewater/Stormwater Manager Ryan Smith, West County Wastewater District (WCWD) Transitional Administrative Services Advisor Glenn Lazof and Transitional Infrastructure & Planning Advisor John Haig, Veolia Water Project Manager Aaron Winer, WCWD CSO Supervisor Gordon Times, and WCWD Capital Program Manager Michael Savannah.

**PLEDGE OF ALLEGIANCE OR OBSERVATION OF MOMENT OF SILENCE**

2. **SPECIAL ORDER OF THE DAY**

   a. **Reorganization of the Agency Board of Directors**

Director Bates nominated Director Alvarado to be the Chair. A motion was made by Director Bates and seconded by Director Martinez to appoint Director Alvarado as the Chair through June 2020. The motion passed unanimously.

Chair Alvarado nominated Director Martinez to be Vice Chair. A motion was made by Chair Alvarado and seconded by Director Wiener to appoint Director Martinez as the Vice Chair through June 2020. The motion passed unanimously.

3. **PUBLIC COMMENTS**

There were no public comments.

4. **MINUTES**

   a. **September 6, 2018, Board Meeting Minutes**

A motion made by Director Wiener, seconded by Director Bates to approve the minutes of the September 6, 2018 Board meeting. The motion unanimously passed.
5. **UNFINISHED BUSINESS**  
There was no unfinished business.

6. **NEW BUSINESS**  
a. **Adopt Resolution Adopting the West County Agency Budget for Fiscal Year 2020**  
A motion was made by Director Wiener and seconded by Director Bates to adopt Resolution No. 19-001 adopting the West County Agency Budget for fiscal year 2020 and authorizing the Agency Manager to expend budgeted funds.

7. **BOARD/STAFF REPORTS**  
a. **Report from Board on issues pertaining to the overall operation of the West County Agency**  
Chair Alvarado proposed that the Agency meet three (3) times a year in the upcoming year on the fourth Thursday of quarterly months at 10:00 a.m. with the schedule of meetings being held October 24, 2019, February 27, 2020 and June 25, 2020.  
There was general agreement to the proposed schedule.

b. **Report from Manager and Staff on issues pertaining to the overall operation of the West County Agency**  
There were no reports.

c. **Report from Board Attorney Comments/Communications on issues pertaining to the overall operation of the West County Agency**  
Board Attorney Cabral reported that there have been discussions about making some revisions to the Joint Powers Agency (JPA) agreement and if and when this happens, it will be presented to both the City of Richmond and the West County Wastewater District for review and approval.

d. **Receive San Francisco Bay Regional Water Quality Control Board Monthly NPDES Compliance Reports for the months of August, 2018 through April, 2019**  
The reports were received and filed.

e. **Receive Marine Outfall ATON Buoys Quarterly Maintenance and Inspection Reports of November 27, 2018, and February 21, 2019**  
The reports were received and filed.

8. **FINANCES**  
a. **Receive Budget to Actuals Report through May 2019, and Check Register for Payments made for the month of August 2018 through May 2019**  
The report and the check register were received and filed.

b. **Receive West County Agency June 30, 2018 Audited Financial Statements**  
The audited financial statements were received and filed.

9. **UPCOMING MEETING AGENDA ITEMS**  
A Special Board meeting was scheduled for October 24, 2019 at 10:00 a.m.
10. **CLOSED SESSION**
There was no closed session.

11. **ADJOURNMENT**
The meeting adjourned at 10:38 a.m.

______________________________
CHAIR
TO: Honorable Board of Directors  
West County Agency  

DATE: October 24, 2019  

REPORT BY: Lisa Malek-Zadeh, Agency Manager  

SUBJECT: Purchasing Authority  

RECOMMENDATION  
Adopt a Resolution authorizing the Agency Manager to procure goods and services to the same extent authorized by the Managing Agency’s Purchasing Policy.  

CURRENT SITUATION  
The West County Agency (WCA) has never developed a formal procurement policy even though it has typically deferred to the WCWD’s procurement process. The lack of a purchasing policy was not a problem when the WCA Board met monthly, but it is now meeting annually with quarterly special meetings as needed. This affects the efficiency of administering Agency business.  

In order to address this, staff proposes that the Board authorize the Agency Manager to procure goods and services to the same extent authorized by the Managing Agency’s Purchasing Policy. For the time being, this means that the Agency Manager will use the WCWD’s purchasing process and authority to the same extent the WCWD’s General Manager does. If Richmond becomes the managing agency, it will be able to use its usual procurement process.  

The WCWD’s purchasing policy allows the WCWD’s General Manager to approve purchases up to $50,000 per year per vendor for operation and maintenance items and up to $75,000 per year for capital expenses. Any other expenditure over the WCWD limits and not included in the Fiscal Year 2020 Budget will come to the WCA Board for approval. The Agency Manager will, of course, consult with Richmond’s staff representative before authorizing any such expenditures.
BACKGROUND
The West County Agency is a joint exercise of powers agency formed under California Government Code §6500. It operates under an agreement entitled “Joint Exercise of Powers Agreement of the West County Agency by and among West Contra Costa Sanitary District and the City Of Richmond and the Richmond Municipal Sewer District” (the “JPA”). The JPA was amended and restated as of June 15, 1984. It has been amended four (4) times since then, most recently on August 6, 1996.

Section 9.7 of the 1984 JPA as amended in 1993 requires a general budget for the joint operating fund to be adopted by the Board before June 30 of each year for the ensuing fiscal year. The budget is required to include sufficient detail to constitute an operating guideline, the necessary contributions for each member, and expenditures for maintenance and operation of joint facilities. Approval of the general budget constitutes authority for the WCA Agency Manager (the WCWD General Manager) to bill members for their contributions and expend funds for the purposes outlined in the approved budget within the availability of funds on hand.

Section 1.8 of the JPA authorizes the WCWD to act for and on behalf of the WCA within the scope of authority provided in the JPA and delegated by the Board. The WCWD’s General Manager, as WCA Manager, is authorized to administer the affairs of the WCA and effect any policies adopted by the Board.

The WCA was actively involved in acquiring and administering grants received under the federal Clean Water Act and similar provisions of California law in the 1980s and 1990s. Those grants were used to upgrade Richmond’s and WCWD’s treatment plants from primary treatment to full secondary treatment.

California law and the JPA allow Richmond and the WCWD to exercise powers that are common to them. The vast majority of WCA goods, services and construction are contracted using the WCWD’s purchasing process because the WCWD is the WCA’s management agency.

FISCAL IMPACT
This action will provide a process whereby the Agency Manager can exercise the purchasing authority.
RESOLUTION OF THE BOARD OF DIRECTORS OF WEST COUNTY AGENCY
COUNTY OF CONTRA COSTA, CALIFORNIA

RESOLUTION NO.

AUTHORIZING THE AGENCY MANAGER TO PROCURE GOODS AND SERVICES AND EXPEND AGENCY FUNDS TO THE SAME EXTENT AUTHORIZED BY THE MANAGING AGENCY’S PURCHASING POLICY

The Board of Directors finds and determines as follows:

A. In accordance with Section 12 of the Joint Exercise of Powers Agreement of the West County Agency (“JPA”), the current Managing Agency of the West County Agency (the “Agency”) is the West County Wastewater District (“WCWD”) and the Agency Manager is the WCWD General Manager.

B. The Agency’s Fiscal Year 2020 Budget, which was duly and timely adopted effective July 1, 2019, constitutes an operating guideline for Agency revenues, Agency Member contributions, anticipated administration and operation expenditures, and anticipated expenditures for capital repairs and new projects.

C. Section 9.7 of the JPA, as amended on December 21, 1993, authorizes the Agency Manager to bill Agency members for their contributions and expend Agency funds for the purposes outlined in the approved budget within the availability of Agency funds.

D. Authorizing the Agency Manager to procure goods and services and expend Agency funds to the same extent allowed by the Managing Agency’s purchasing policy will promote efficiency in managing the business of the Agency and clarify the spending authority of the Agency Manager.

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE WEST COUNTY AGENCY AS FOLLOWS:

1. The foregoing recitals are true and correct statements of fact and are incorporated into this Resolution.

2. The Agency Manager is hereby authorized to procure goods and services in the Agency’s name and on its behalf, and to expend Agency funds for the purposes outlined in the approved Agency budget, to the same extent and following the same processes that the Managing Agency authorizes its manager to procure goods and services and expend funds on behalf of the Managing Agency. The Agency Manager shall consult with the non-managing Agency Member before authorizing any such expenditures.
*   *   *  *

I HEREBY CERTIFY that the foregoing Resolution was duly and regularly adopted by the Board of Directors of the West County Agency, Contra Costa County, California at a special meeting held on the 24th day of October, 2019 by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

________________________________________
Chair of the Board of Directors
West County Agency
Contra Costa County, California
TO: Honorable Board of Directors  
West County Agency  

DATE: October 24, 2019  

REPORT BY: Lisa Malek-Zadeh, Agency Manager  

SUBJECT: Cleaning and Inspection of the Joint Marine Outfall  

RECOMMENDED ACTION  
Adopt a Resolution authorizing the Agency Manager to execute a Contract with Global Diving and Salvage, Inc. (GDSI) in an amount not to exceed $82,700 (which includes a 10% cost contingency) for cleaning and inspection of the Joint Marine Outfall.  

CURRENT SITUATION  
The Joint Marine Outfall that discharges combined effluent from WCWD and the City of Richmond into the San Francisco Bay is in need of repair. Observations of damaged concrete and exposed rebar on the outfall were identified in the GDSI inspection report dated February 1-3, 2016. The WCA authorized the Agency Manager to execute a contract for these repairs in March 2016, but the work order was not issued to GDSI. In order to proceed with a repair, the outfall must be inspected, in case additional areas of damaged concrete and exposed rebar have developed since the last inspection. The 2016 inspection report also indicated varying levels of sediment build-up in the outfall, which must be removed to perform an internal inspection.  

BACKGROUND  
Treated effluent from the WCWD WPCP flows to a confluence structure located at the City of Richmond Wastewater Treatment Plant, where the two (2) effluent sources are combined into a Joint Marine Outfall that discharges into the San Francisco Bay. An aerial exhibit showing the location of the two (2) treatment plants and the Outfall is included as Attachment A.  

The Outfall was designed and constructed in 1978. It consists of approximately 1,050 feet of 54-inch reinforced concrete pipe (RCP) and 12,025 feet of 72 inch RCP.  

The last 1,100 feet of the Outfall consists of 140 diffusers connected to the crown of the pipe. The diffuser section of the outfall pipeline was rehabilitated in 1993 with the replacement of the 140 diffuser ports. The new diffusers reduce the possibility of the backflow of seawater due to changes in tides.
Procurement Process
Staff sent a Request for Proposals (RFP) to three (3) vendors and also published the request on the WCWD website. In response, the District received three (3) proposals which were reviewed and scored by staff on the basis of cost, consultant experience, how well the proposal reflected an understanding of the project, and the experience of supervisory staff. The proposal from Global Diving and Salvage, Inc. received the highest average score, which reflects the best overall value to the District. It is also proposed to add a 10% contingency to the proposal price, to allow for additional costs due to unforeseen conditions.

Proposed Scope of Services
The following is a brief summary of the basic scope of work:

1. Conduct an external video inspection of the 1,100-foot diffuser section and each of the 140 diffusers on the outfall.
2. Conduct an inspection of the anodes and epoxy protective coating.
3. Inspection of the position of the pipe relative to the bottom of the bay.
4. Document any unusual conditions observed that may require repair.
5. Remove sediment from the last 100 feet of the diffuser section.
6. Internal video inspection of the last 100 feet of the diffuser section.
7. Prepare a written report of the findings with video documentation.

FISCAL IMPACT
The WCA Budget contains sufficient funding for this work.

ALTERNATIVE(S)
The following alternatives to approval of the staff recommendation are available:

1. Reject staff’s recommendation and provide further direction.
2. Calendar the item for a future meeting and request additional information.

SUPPORTING DOCUMENTS
A. Outfall Aerial Overlay
B. Outfall Profile
RESOLUTION OF THE BOARD OF DIRECTORS OF WEST COUNTY AGENCY
COUNTY OF CONTRA COSTA, CALIFORNIA

RESOLUTION NO.

AUTHORIZE THE AGENCY MANAGER TO EXECUTE A CONTRACT WITH GLOBAL DIVING AND SALVAGE, INC., IN AN AMOUNT NOT TO EXCEED $82,700 FOR CLEANING AND INSPECTION OF THE JOINT MARINE OUTFALL

The Board of Directors finds and determines as follows:

A. The Joint Marine Outfall is a critical part of the Agency’s infrastructure and must be regularly maintained.

B. A request for proposals was sent to three (3) diving companies for cleaning and inspection of the joint marine outfall.

C. The proposal from Global Diving and Salvage, Inc. of Vallejo, California was determined to provide the best overall value.

D. Funding for this project is available in the Fiscal Year 2020 WCA budget.

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE WEST COUNTY AGENCY AS FOLLOWS:

1. The foregoing recitals are true and correct statements of fact and are incorporated into this Resolution.

2. The Board of Directors of the West County Agency, County of Contra Costa, California, hereby authorizes the Agency Manager to: a) execute a base contract in an amount of $75,190 for cleaning and inspection of the Joint Marine Outfall with Global Diving and Salvage, Inc., 1080 Nimitz Ave, Suite 440 Vallejo, California; b) execute change orders up to 10% of the base contract amount without further Board authorization for a total not to exceed $82,700; c) to execute all other documents necessary to facilitate completion of the work; and d) to appropriate, encumber and expend sufficient funds to pay for the work.

I HEREBY CERTIFY that the foregoing resolution was duly and regularly adopted by the Board of Directors of the West County Agency, Contra Costa County, California, at a special meeting held on the 24th day of October 2019, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____________________________
Chair of the Board of Directors
West County Agency
Contra Costa County, California
ATTACHMENT B

WEST COUNTY RICHMOND OUTFALL PROFILE

FIGURE 1

WEST COUNTY WASTEWATER DISTRICT
TO: Honorable Board of Directors
West County Agency

DATE: October 24, 2019

REPORT BY: Lisa Malek-Zadeh, Agency Manager

SUBJECT: Motorola Moscad Radio System Upgrade

RECOMMENDATION

Adopt a Resolution authorizing the Agency Manager to execute a Contract with Cascade Integration and Development, Inc. (CID) in an amount not to exceed $44,112 to upgrade the outdated Motorola Moscad Radio Based Control System and amending the West County Agency budget to provide funding.

CURRENT SITUATION

A pipeline, constructed in 1978, runs between the Republic Landfill, WCWD Wastewater Treatment Facility and City of Richmond/Veolia Wastewater Treatment Facility. The pipeline carries leachate (drainage captured from the bottom of the landfill) from the landfill to the Richmond/Veolia plant for treatment. The pipeline is used to pump digested sludge from the Richmond/Veolia plant to the WCWD sludge lagoons the rest of the time. Following the transport of either sludge or leachate, flush water is pumped into the line to clear the contents in preparation for the next transport.

The system has been operating in manual mode for three (3) years. This operational mode heightens the risk of over pumping or inadequate flushing of the pipeline. Communications necessary between the two organizations’ operations groups to manually change valve configurations and differing staffing schedules contribute to a higher risk to the Agency partners.

BACKGROUND

In 2008 a Moscad Radio Control System (as described in further detail in the attached CID proposal) was designed and installed to automate the system of valves and pumps and control the transport of leachate and sludge between the sites. This automated
system worked well for approximately eight (8) years until the radios began to fail. The current system is obsolete. In 2018 CID provided a proposal to replace the existing communications system as shown in Attachment A.

**FISCAL IMPACT**

The total project cost is $44,112 which will be split equally between the West County Wastewater District and City of Richmond per the JPA Agreement. The project cost was not included in the WCA Fiscal Year Budget.

**ALTERNATIVE(S)**

If the Board does not approve upgrading the communications system, staff will be required to manually change valve configurations which heightens the risk of over pumping or inadequate flushing of the pipeline.

**SUPPORTING DOCUMENTS**

A. Contractor Proposal
RESOLUTION OF THE BOARD OF DIRECTORS OF WEST COUNTY AGENCY
COUNTY OF CONTRA COSTA, CALIFORNIA

RESOLUTION NO.

AUTHORIZING THE AGENCY MANAGER TO EXECUTE A CONTRACT WITH CASCADE INTEGRATION AND DEVELOPMENT, INC. IN AN AMOUNT NOT TO EXCEED $44,112 TO UPGRADE THE MOTOROLA MOSCAD RADIO BASED CONTROL SYSTEM AND AMENDING THE FISCAL YEAR 2020 BUDGET

The Board of Directors finds and determines as follows:

A. The 2008 Moscad Radio Control System is non-functioning and obsolete and needs to be upgraded.

B. Cascade Integration and Development, Inc. has submitted a proposal to replace the existing Moscad Radio Communications System that is currently being used for the Leachate Bypass Pipeline.

C. Failure to replace the existing radio communications system heightens the risk of over pumping or inadequate flushing of the pipeline.

D. Funding for this project was not provided for in the Fiscal Year 2020 WCA Budget.

NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE WEST COUNTY AGENCY AS FOLLOWS:

1. The foregoing recitals are true and correct statements of fact and are incorporated into this Resolution.

2. The Board of Directors of the West County Agency, County of Contra Costa, California, hereby authorizes the Agency Manager to: a) execute a contract in an amount of $44,112 for the replacement of the existing Moscad Radio Communications System with Cascade Integration and Development, Inc., Bend, Oregon and b) execute all other documents necessary to facilitate completion of the work.

3. The Fiscal Year 2020 Budget is amended in the amount of $44,112 and the Agency Manager is authorized to appropriate, encumber and expend sufficient funds to pay for the work.

I HEREBY CERTIFY that the foregoing resolution was duly and regularly adopted by the Board of Directors of the West County Agency, Contra Costa County, California, at a regular meeting thereof held on the 24th day of October 2019, by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____________________________
Chair of the Board of Directors
West County Agency
Contra Costa County, California
September 24th, 2019

Ed Baquerizo  
Environmental Manager  
Republic Services  
1 Parr Blvd. Building C  
Richmond, CA 94801

Aaron Winer  
Water Quality Manager  
West County Wastewater District  
2377 Garden Tract Road  
Richmond, CA 94801

Dennis Flosi  
Controls Systems Manager  
Veolia North America  
601 Canal Blvd  
Richmond, CA 94804

To All Parties,

We are Cascade Integration and Development, Inc. (CID), a registered S-Corporation and a California contractor doing business as CID Technologies, CSLB# 1019085.

This proposal contains proprietary and confidential information of CID and shall not be used, disclosed or reproduced, in whole or in part, for any purpose other than to evaluate this proposal, without the prior written consent of CID. Title in and to this document and all information contained herein remains at all times in CID.

This is a Time & Materials proposal to specify and replace the existing Moscad communications system that is currently being used for the Leachate Bypass Pipeline. The reasoning for this replacement is explained in the project narrative.

This estimate expires November 1st, 2019. The estimate is separated in the following sections:

1. Project Narrative  
2. Proposal Type  
3. Assumptions and Unknowns  
4. Scope  
5. Schedule  
6. Expenses  
7. Cost Summary  
8. Payments  
9. Terms and Conditions of Sale

CID, Inc. thanks you for opportunity to provide you with our quality control solutions.

Sincerely,

Matthew Callahan
1. PROJECT NARRATIVE

1.1. Existing System

The existing system is comprised of PLC’s at each location that control equipment associated with the Leachate Bypass Line. The primary PLC program that conducts the transfers between the locations resides at the City of Richmond waste treatment facility. The other PLC programs only provide local “manual” control and provide messaging back to the primary PLC. The PLC’s communicate to each other by use of the Motorola Moscad System. This is a licensed, low bandwidth, communication system that WCWD also uses to communicate to their lift stations.

1.2. Existing Issues

There are multiple issues that exist with this system:

- Multiple failures have been experienced over the years.
- Original equipment is no longer available, it must be upgraded to the newer Motorola “ACE” units. This has been proven to be expensive and rather tedious.
- The Motorola MOSCAD system is serviced by a different vendor than the PLC equipment. This makes troubleshooting very difficult and hard to coordinate for the customers.

1.3. Suggested Solution

The objective of this project is to provide an alternative solution for the MOSCAD communications that can be supported by CID and other System Integrators. This will decrease the amount of downtime and frustrations for all parties. CID promotes utilizing a Message Queuing Telemetry Transport (MQTT) data exchange protocol. MQTT is a popular protocol for Internet of Things (IoT) but is becoming widely used for industrial applications such as this.
Technical features of this protocol include: (from https://www.mqtt.com/features)

- A publish/subscribe messaging model that facilitates one-to-many distribution. The sending applications or devices do not need to know anything about the receiver, not even its address.
- Ideal for constrained networks (low bandwidth, high latency, data limits, fragile connections). MQTT message headers are kept as small as possible; the fixed header is just 2 bytes. Its on demand, push-style message distribution keeps network utilization low.
- Multiple service levels allows flexibility in handling different types of messages. Developers can designate that messages will be delivered “at most once”, “at least once”, or “exactly once”.
- Designed specifically for remote devices with little memory or processing power. Minimal headers, a small client footprint and limited reliance on libraries make MQTT ideal for constrained devices.
- Easy to use and implement with a simple set of command messages. Many applications of MQTT can be accomplished using just CONNECT, PUBLISH, SUBSCRIBE and DISCONNECT.
- Built-in support for loss of contact between client and server. The server is informed when a client connection breaks abnormally, allowing the message to be re-sent or preserved for later delivery.
- MQTT uses a single TCP/IP port connection from client to server. This allows easier firewall and security implementation.

To utilize MQTT a fundamental change in architecture would be required. Instead of each site being connected directly together with a point to point radio system, each site would instead Publish and Subscribe to a data “Broker” that is hosted in the cloud. This Broker would be a “middle-man” for all data exchange. Each site would access the Broker over SSL encryption, push-out outbound data, and pull-down inbound data. This would achieve the data exchange necessary and keep each network autonomous.
1.4. **Project Approach**

CID suggests this project be executed in three phases:

**Phase 1 - Design**
In this phase we would design hardware, software, and network requirements at each site. CID would work with each customer and their associated IT department to determine the most secure and reliable way to access the data Broker in the cloud.

**Phase 2 - Proof of Concept**
Once the design is done the associated MQTT hardware and software would be developed and deployed, but not yet utilized by the bypass pipeline system. Simulated data would be configured to be exchanged between each site. The performance of this data exchange would be monitored, historized, and reviewed with the customers. If any performance issues arise they will be investigated and resolved.

**Phase 3 – Commissioning**
Once proof of concept is achieved the Bypass Pipeline control system will be cutover to utilized the new data exchange method and tested. The existing Moscad system will be disconnected. Operators will be provided a training, though all current functionality will be the same.

2. **PROPOSAL TYPE**

2.1. This is a Time and Materials proposal with a not to exceed value.

3. **ASSUMPTIONS AND UNKNOWNS**

3.1. All customers will be accommodating to a MQTT cloud connection. The connection can be achieved using existing ISP connectivity or a new autonomous cellular modem.

4. **SCOPE**

4.1. CID will provide the following services:

4.1.1. **Phase 1 - Design**
   4.1.1.1. Review available hardware and software at each location and discuss options with customers.
   4.1.1.2. Review internet access options with IT staff at each location and determine best solution.

4.1.2. **Phase 2 – Proof of Concept**
   4.1.2.1. Procure required hardware.
   4.1.2.2. Develop MQTT associated logic for data exchange.
   4.1.2.3. Test in house.
   4.1.2.4. Deploy at each site.
   4.1.2.5. Review performance data with customers.
4.1.3. Phase 3 – Commissioning
   4.1.3.1. Cut over communications methods at each site.
   4.1.3.2. Test functionality of Bypass Pipeline with operators.
   4.1.3.3. Resolve any issues that arise.
   4.1.3.4. Update documentation packages for all customers.

4.2. CID will provide the following deliverables:

   4.2.1. New MQTT associated hardware and software.
   4.2.2. New Cellular Modems as applicable.
   4.2.3. Updated documentation with memory mapping.
   4.2.4. Cost: $800 to $3,200 per location depending on what is needed.

4.3. CID will not provide the following as part of this proposal:

   4.3.1. Electrical installation above 24vdc.
   4.3.2. Changes to Bypass Pipeline software functionality.
   4.3.3. MOSCAD equipment demolition. (Outsourced to Thunderbird Communications)

4.4. CID will require the customer to provide the following to fulfill the work proposed:

   4.4.1. Customer inhouse IT or controls staff support and cooperation.
   4.4.2. Local access to control panels.
   4.4.3. Local and remote access to modify PLC programs.
   4.4.4. Pipeline downtime for commissioning.

5. SCHEDULE

5.1. Work will begin within four weeks on formal acceptance of proposal. Purchase order, task order, or contract is required from all parties.

6. EXPENSES

Expenses will be charged at cost. Values below are estimations.

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<tr>
<td>5.1 Airfare (4 Trips)</td>
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<td>5.2 Lodging (10 Days onsite, 8 nights)</td>
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<td>5.3 Rental Car and Meals (10 Days onsite)</td>
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<td><strong>Total</strong></td>
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7. **COST SUMMARY**

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<tr>
<td>Labor (200 Hours @ $135/hour)</td>
<td>$27,000.00</td>
</tr>
<tr>
<td>Deliverables**</td>
<td>$10,512.00</td>
</tr>
<tr>
<td>Expenses</td>
<td>$6,600.00</td>
</tr>
</tbody>
</table>

**Includes Tax at 9.5%**

**Project Total**

$44,112.00

7. **PAYMENTS**

7.1. Terms of payment are:

7.1.1. 50% down payment on hardware and software payable with purchase order.
7.1.2. 50% of total hardware and software on shipment of equipment to job site, net 30 days.
7.1.3. All labor will be billed upon shipment of enclosure. Invoices will provide summarized hours. Detailed time sheets will be provided only upon request.
7.1.4. CID, Inc. standard terms and conditions of sale are provided in section 8 of this proposal.

8. **TERMS AND CONDITIONS OF SALE**

8.1. **TERMS OF SALE:** All CID, Inc. proposals, all acceptance of PURCHASER’S orders, and all sales by CID, Inc. are expressly limited, and expressly made conditional upon the PURCHASER’S acceptance of and assent to the CID, Inc. Terms and Conditions of Sales as set forth herein, notwithstanding receipt of, or acknowledgment of, the PURCHASER’S order form or specifications containing additional or different provisions, or conflicting oral representations by any agent or employee of CID, Inc. No waiver, change, or modification of any terms or conditions shall be binding on CID, Inc. unless made in writing and signed by an officer or authorized manager of CID, Inc.

8.2. **WARRANTY:** CID, Inc. warrants to the original PURCHASER all equipment and products manufactured by it and bearing its name to be free of defects in material and workmanship under normal use and service for a period of twelve (12) months from the date of shipment from CID, Inc., except for equipment which carries less than a one year warranty (from the date of shipment from CID, Inc.) by the original equipment manufacturer. In those cases, CID, Inc. will warrant that equipment for the same length of time as the original equipment manufacturer. This warranty is applicable only if the CID, Inc. product and/or equipment is installed, operated and maintained in accordance with factory recommendations and procedures.

8.2.1. In the event the CID, Inc. product and/or equipment is found to be defective within the above-stated warranty period, CID, Inc. will repair or replace defective parts if the product or equipment is shipped prepaid to CID, Inc.’s manufacturing facility and if such product and/or equipment is found by CID, Inc.’s inspection to be truly defective in workmanship or material, CID, Inc. will return-ship such repaired product and/or equipment prepaid within the Continental United States. If CID, Inc.’s inspection does not disclose any defect in workmanship or material, repairs will be made at a reasonable charge.

8.2.2. The warranties set forth herein are in lieu of any and all other warranties expressed or implied, including the warranties of merchantability and fitness for purposes and the buyer acknowledges that no other representations were made to him or relied upon by him with respect to the quality and function of the goods herein sold.
8.3. LIMITATIONS OF LIABILITY: In no event, whether as a result of breach of contract, warranty or tort (including negligence), shall CID, Inc. or its suppliers be liable for any indirect, consequential, incidental, special damages, including for purposes of illustration, but not for limitation, loss or profits or revenues, loss of use of equipment furnished or serviced by CID, Inc., damage to, or loss of use of, any associated equipment, costs of capital, costs of substitute or replacement products, facilities, service or power, down time costs, or claims of the purchaser’s customer for such damages. If the purchaser transfers title to or leases the products sold or serviced hereunder to any third party, the customer shall obtain from such third party a provision affording to CID, Inc. and its suppliers the protection of the preceding sentence, and the purchaser will defend and hold CID, Inc. harmless from any claims of such third parties. 8.3.1. CID, Inc.’s liability on any claim of any kind (including negligence) for any loss of damage arising out of or resulting from this agreement, or from the performance or breach thereof, or from the products or services furnished hereunder, shall in no case exceed the price of the specific product or service which gives rise to the claim. All such liability shall terminate upon the expiration of the warranty period, as herein above stated.

8.4. NO RESPONSIBILITY FOR GRATUITOUS INFORMATION OR ASSISTANCE: The furnishing of advice or other assistance without separate compensation therefore will not subject CID, Inc. to any liability, either in contract, warranty, tort (including negligence), or otherwise.

8.5. CANCELLATION AND TERMINATION: Any order or contract may be terminated by PURCHASER only by written notice and upon payment to CID, Inc. of reasonable and proper cancellation charges, including but not limited to all labor, facility, and equipment costs related to the order or contract which have been incurred prior to the date of notice of cancellation. All additional costs resulting from the cancellation, including full cost of any materials CID, Inc. has purchased that cannot be canceled or returned, plus restocking charges on all returnable material, and fifteen percent (15%) of the final net price will be included in the cancellation charges to compensate for disruptions in scheduling, planned production, and other direct costs. All engineering, software, drafting, and shop time expended on the project prior to cancellation will be included in the cancellation charges at CID, Inc. standard rates for such services. Payment shall be made within thirty (30) days from the date of invoice. CID, Inc. shall have the right to cancel any order or contract at any time by written notice for any breach of the order or contract by the PURCHASER, or by government action and CID, Inc. shall be entitled to collect cancellation charges as identified above.

8.6. FORCE MAJEURE: CID, Inc. shall not be liable for any loss, damage, or delay in delivery due to acts of God or causes beyond its reasonable control including acts of the PURCHASER, acts of civil or military authority, fires, strikes, floods, epidemics, quarantine restrictions, war, riots, delays in transportation, transportation embargoes, or inability due to causes beyond its reasonable control to obtain necessary engineering talent, labor, materials, or manufacturing facilities. In the event of such delay, the date or dates for performance hereunder by CID, Inc. shall be extended for a period equal to the time lost by reason of the delay.

8.7. REGULATORY LAWS AND/OR STANDARDS: CID, Inc. makes no promise or representation that its product will conform to any federal, state or local laws, ordinances, regulations, codes, or standards, except as particularly specified and agreed upon for compliance in writing as a part of the contract between PURCHASER and CID, Inc. CID, Inc. prices do not include the cost of any related inspections or permits for inspection fees.

8.8. SHIPMENT: Shipments will be F.O.B. Origin. PURCHASER is to pay all shipping, insurance and related expenses. CID, Inc. shall not be liable for damage to or loss of equipment after shipment of such equipment. Scheduled or stipulated shipping dates are approximate and based upon prompt receipt of all necessary information from PURCHASER. If shipment is delayed at the request of, or due to acts or omissions by PURCHASER, CID, Inc. shall have the right to store items related to this project at a place of its own choice at PURCHASER’S risk and expense. Each shipment shall be examined by the PURCHASER
immediately upon receipt thereof, and any claim for shortage or any other cause must be reported to CID, Inc. promptly after such receipt.

8.9. **GOVERNING LAW:** These Terms and Conditions of Sale shall be construed in accordance with the law of the State of Oregon. Any disputes between the parties shall be resolved through mandatory arbitration under the rules of the Arbitration Service of Portland. The results of the arbitration shall be final and binding. The arbitration hearing shall be held in Bend, Oregon.

8.10. **ASSIGNMENT:** This agreement may not be assigned by PURCHASER without the written consent of CID, Inc. CID, Inc. may assign this Agreement if such assignment is in connection with the sale of substantially all of its assets.

8.11. **SEVERABILITY:** The invalidity of any segment of these Terms and Conditions shall in no way operate to invalidate any other portion and, except for the invalid segment, the entire balance of these Terms and Conditions shall be and remain in full force and effect.