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# Scope of Work Memorandum

*Project Background, Technical Approach, Cost Estimate & Board Action Requested*

- Purpose & Background — 238 meters remaining without AMI endpoints
- Scope of Work — 6-task installation process (ORC-performed)
- Technical Approach — Badger R900 MC endpoint specifications
- Project Cost Estimate — \$76,969 projected / \$80,000 NTE
- Project Timeline — Authorization through Final Report
- Board Action Requested — Four motions for approval

# DEER CREEK WATER DISTRICT

AMI Endpoint Retrofit Project  
Scope of Work Memorandum • June 2026

<b>Prepared By:</b>	Community Resource Services of Colorado, LLC	<b>Date:</b>	June 2026
<b>District:</b>	Deer Creek Water District	<b>Project Type:</b>	AMI Cellular Endpoint Retrofit
<b>Contact:</b>	Michael Schenfeld, District Manager	<b>Installer:</b>	Water Operator / ORC

## 1. PURPOSE & BACKGROUND

Deer Creek Water District operates a service area of 283 metered water connections. Of these, 238 meters currently lack Advanced Metering Infrastructure (AMI) cellular endpoints and are read manually. This project will complete the District's transition to a fully automated, cellular-based meter reading system by retrofitting all remaining meters with plug-in endpoints and cellular transmitters.

Completion of this project will eliminate manual meter reading labor, enable near-real-time consumption monitoring, improve leak detection, and provide customers with enhanced billing accuracy.

## 2. SCOPE OF WORK

The District's licensed Water Operator (Operator of Record in Charge — ORC) will perform all installation work. No outside contractor is required. The scope includes the following tasks:

#	Task	Description
1	<b>Procurement</b>	Purchase 238 cellular endpoints with retrofit installation kits (plug-in receiver connectors + pit lid cellular transmitters)
2	<b>Scheduling</b>	ORC (Water Operator / Operator of Record in Charge) to schedule installation routes across the 283-home service area
3	<b>Installation — Endpoint Plug-In</b>	Connect endpoint receiver plug-in to existing meter in each pit. No meter replacement required.
4	<b>Installation — Pit Lid Modification</b>	Cut lid penetration in each meter pit lid; install cellular transmitter antenna through lid; seal penetration.
5	<b>Network Activation</b>	Activate each endpoint on the Badger R900 cellular AMI network; verify data transmission to utility management system.
6	<b>Quality Control &amp; Documentation</b>	Log each installed endpoint (meter ID, GPS location, serial number, activation date) in installation tracking log. Report to Board upon completion.

## 3. TECHNICAL APPROACH

### Equipment

- Endpoints: Badger R900 Cell Pit MC 6 Wire 2 Ant (Item SP-N15371200) — blended all-in cost includes SaaS cellular network license (N360 Multi-Carrier) and Neptune trade surcharge per Ferguson Order No. 1688982

- Retrofit kit: Plug-in receiver connector compatible with existing Badger E-Series ultrasonic meters
- Pit lid transmitter: Cellular antenna/transmitter unit installed through a cut penetration in the meter pit lid
- No meter body replacement is required

Installation Method

- ORC plugs endpoint receiver into the existing meter register port
- ORC cuts a standard-diameter hole in the meter pit lid for the cellular transmitter antenna
- Antenna is sealed at the penetration point to maintain pit integrity
- Endpoint is registered and activated on the cellular AMI network
- Data transmission is verified prior to moving to next meter

4. PROJECT COST ESTIMATE

The following cost estimate is based on 238 meters remaining to be retrofitted. The per-unit equipment cost of \$219.00 is a blended all-in figure derived from Ferguson Waterworks Order No. 1688982 (dated June 8, 2026), inclusive of the R900 Cell Pit MC endpoint (\$195.00/unit), N360 Cell SaaS Multi-Carrier license (\$14.37/unit), and Neptune trade surcharge (\$2,304.00 flat), spread across 240 ordered units. ORC labor is charged at \$150.00/hour with 30 additional minutes (0.5 hour) per installation.

Cost Element	Amount
Equipment — Blended All-In (238 units × \$219.00)	<b>\$52,122</b>
ORC Installation Labor (238 units × 0.5 hr × \$150/hr)	<b>\$17,850</b>
10% Contingency (Unforeseen Conditions)	\$6,997
<b>TOTAL PROJECTED COST</b>	<b>\$76,969</b>
<b>BOARD-AUTHORIZED NOT-TO-EXCEED (NTE)</b>	<b>\$80,000</b>

*Note: Equipment unit cost of \$219.00 is a blended all-in figure based on Ferguson Order No. 1688982 (June 8, 2026), inclusive of endpoint, SaaS license, and Neptune trade surcharge across 240 units. A 10% contingency (\$6,997) is included for unforeseen field conditions or cost adjustments. Total projected cost is \$76,969; the Board-authorized NTE is \$80,000.*

5. PROJECT TIMELINE

Phase	Activity	Target Timeframe
1	Board Authorization & Budget Approval	June/July 2026
2	Equipment Procurement (238 endpoint kits)	July 2026
3	ORC Installation — Field Work	August – September 2026
4	Activation, Testing & QC	September 2026
5	Final Report to Board	October 2026

6. BOARD ACTION REQUESTED

Management respectfully requests that the Board of Directors:

- Authorize the purchase of 238 AMI endpoint retrofit kits at a blended all-in cost of \$219.00 per unit (\$52,122 total), per Ferguson Waterworks Order No. 1688982 dated June 8, 2026;
- Authorize ORC installation labor at \$150.00/hour, estimated at \$17,850 for the full project; and

- Approve a Board-authorized Not-to-Exceed budget of \$80,000 (total projected cost \$76,969, including 10% contingency), with authority for Management to issue purchase orders as needed to complete the project.

*Prepared by Community Resource Services of Colorado, LLC on behalf of Deer Creek Water District.*

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# Board of Directors Presentation

*Project Overview, Installation Process, Budget Summary & Board Motions*

- Slide 1 — Title & project overview
- Slide 2 — Current status vs. what we're doing
- Slide 3 — 6-step installation process
- Slide 4 — Budget summary: \$52,122 + \$17,850 + \$6,997 contingency
- Slide 5 — Project timeline & benefits upon completion
- Slide 6 — Board action: 4 motions / \$80,000 NTE authorization

# AMI Endpoint Retrofit Project

*Cellular Endpoint Installation — Remaining 238 Meters*

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238

meters remaining  
to be retrofitted

Deer Creek Water District | Board of Directors Meeting | 2026

*Prepared by Community Resource Services of Colorado, LLC*

# Project Overview

## Current System Status

Total Service Connections **283 meters**

Endpoints Already Installed **45 meters**

Remaining to Retrofit **238 meters**

Current Reading Method **Manual**

Target Reading Method **Cellular AMI**

## What We're Doing

This project will retrofit all 238 remaining water meters with cellular AMI endpoints — completing the District's full transition to automated meter reading.

### No meter replacement is needed.

- Endpoint plugs into the existing meter's receiver port
- Lid penetration cut for cellular transmitter antenna
- Installed by District's licensed Water Operator (ORC)
- Each unit activated on Badger R900 cellular AMI network
- No service interruption to customers

# Installation Process

1

## Procurement

Purchase 238 endpoint retrofit kits — plug-in receiver connectors & pit lid cellular transmitters

2

## Scheduling

ORC schedules installation routes across the 283-home service area

3

## Plug-In Endpoint

ORC connects endpoint receiver plug-in to the existing meter register port in the pit

4

## Lid Modification

Cut standard penetration in meter pit lid; install and seal cellular transmitter antenna

5

## Activation & Test

Activate on Badger R900 cellular AMI network; verify data transmission for each meter

6

## QC & Reporting

Document each install (meter ID, serial number, date); final report to Board

# Project Budget Summary

## Equipment — Blended All-In

**\$52,122**

238 units × \$219.00

## ORC Installation Labor

**\$17,850**

238 × 0.5 hr × \$150/hr

## 10% Contingency

**\$6,997**

Unforeseen conditions

## Total Projected Cost

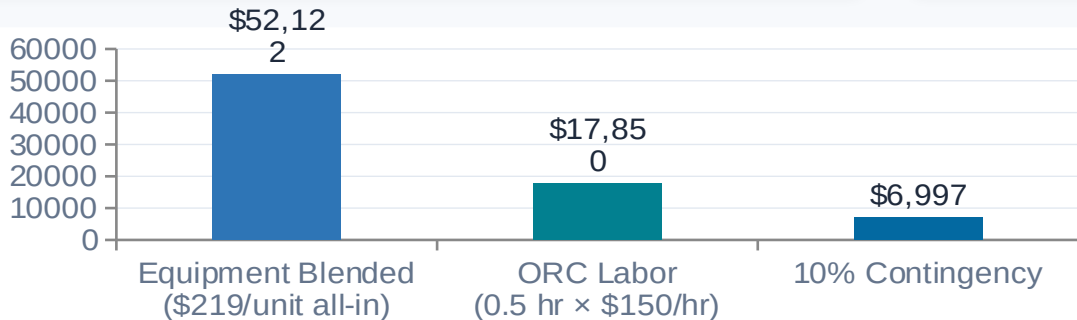
Equipment + Labor + Contingency

**\$76,969**

## Board-Authorized NTE

Recommended authorization

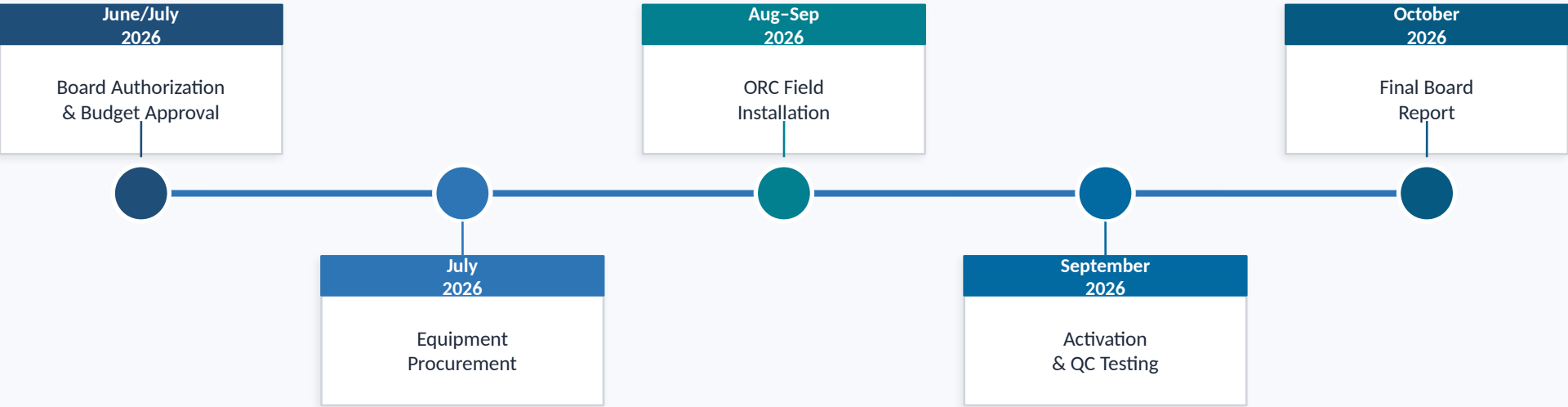
**\$80,000**



## Cost Assumptions

Meters to Retrofit	238
Equip. Cost / Unit (blended)	\$219.00
Labor Rate (ORC)	\$150/hr
Labor Cost / Meter	\$75.00
10% Contingency	\$6,997
<b>Total Projected</b>	<b>\$76,969</b>
<b>Board NTE</b>	<b>\$80,000</b>

# Project Timeline



## Benefits Upon Completion

- Eliminates manual meter reading labor costs
- Improved billing accuracy for all 283 connections
- Operational efficiency for District staff & ORC
- Near real-time consumption data & leak detection
- Full AMI system coverage across entire District
- Remote monitoring without site visits

# Board Action Requested

## Motion 1

### Authorize Equipment Purchase

Approve purchase per Ferguson Order No. 1688982 — R900 MC endpoints, SaaS license & surcharge, blended \$219/unit

**\$52,122**

## Motion 2

### Authorize ORC Installation Labor

Authorize ORC labor at \$150/hr, 0.5 hr per meter (238 meters)

**\$17,850**

## Motion 3

### Approve 10% Contingency

Approve contingency reserve for unforeseen field conditions or cost adjustments

**\$6,997**

## Motion 4

### Approve NTE Authorization

Authorize NTE of \$80,000 (projected cost \$76,969) with authority to issue purchase orders

**\$80,000 NTE**

*Questions or Discussion*

# Installation Tracking Workbook (Sample Exhibit)

*Dashboard, Budget Summary, Installation Log & Reference — Full workbook: DCWD\_AMI\_Installation\_Track*

Tab 1 — Dashboard: live metrics (installed count, % complete, cost to date)

Tab 2 — Installation Log: 238 rows with status dropdown, auto-cost, totals

Tab 3 — Budget Summary: estimated vs. actual, NTE variance tracking

Tab 4 — Reference & Notes: equipment specs, cost assumptions, Ferguson order details

Sample exhibit shown — 10 rows illustrated; full workbook contains all 238 meters

### TAB 1 — DASHBOARD

Live summary metrics — formula-driven from the Installation Log tab.

METRIC	VALUE	SOURCE
Total Meters	283	Fixed assumption
Endpoints Installed	0 → updates live	COUNTIF(Installation!H:H,"Installed")
Remaining	238 → updates live	Total Meters – Installed
% Complete	0.0% → updates live	Installed ÷ Total Meters
Total Cost to Date	\$0 → updates live	SUMIF(Installation!H:H,"Installed",L:L)

### TAB 3 — BUDGET SUMMARY

Tracks estimated vs. actual spend. Estimated column is formula-based; Actual column pulls live from the Installation Log.

Cost Element	Unit Count	Unit Cost	Estimated Total	Actual (from Log)	Notes
Equipment — Blended All-In (R900 MC + SaaS + Surcharge)	238	\$219.00	\$52,122	Live from log	Ferguson Order No. 1688982 Jun 8, 2026
ORC Installation Labor (0.5 hr × \$150/hr)	238	\$75.00	\$17,850	Live from log	Budgeted labor rate
10% Contingency (Unforeseen Conditions)	—	—	\$6,997	—	10% of equipment + labor
<b>TOTAL PROJECTED COST</b>	—	—	<b>\$76,969</b>	<b>Live from log</b>	
<b>BOARD-AUTHORIZED NTE</b>	—	—	<b>\$80,000</b>	—	<b>Board authorization amount</b>

Budget Variance	Formula	Description
Remaining Budget (NTE \$80,000 – Actual)	=E9–F8	Updates as installs are logged
Meters Installed (from log)	=COUNTIF(H:H,"Installed")	Live count from Installation tab

## TAB 2 — INSTALLATION LOG (Sample — First 10 Rows Shown)

The full log contains 240 rows (238 meters + 2 buffer). Each row includes a Status dropdown (Pending / Installed / Issue - Follow Up), pre-filled equipment cost (\$219.00) and labor cost (\$75.00), with an auto-calculated total. Dashboard and Budget Summary update live as Status is changed to "Installed".

#	Meter ID	Service Address	Endpoint S/N	Install Date	Status	Activation Confirmed?	Equip. Cost	Labor Cost	Total Cost
1	DCWD-001	3344 Deer Creek Dr	—	—	Pending	—	\$219.00	\$75.00	\$294.00
2	DCWD-002	3346 Deer Creek Dr	—	—	Pending	—	\$219.00	\$75.00	\$294.00
3	DCWD-003	3348 Deer Creek Dr	—	—	Pending	—	\$219.00	\$75.00	\$294.00
4	DCWD-004	3350 Deer Creek Dr	—	—	Pending	—	\$219.00	\$75.00	\$294.00
5	DCWD-005	3352 Deer Creek Dr	—	—	Pending	—	\$219.00	\$75.00	\$294.00
6	DCWD-006	3354 Deer Creek Dr	—	—	Pending	—	\$219.00	\$75.00	\$294.00
7	DCWD-007	3356 Deer Creek Dr	—	—	Pending	—	\$219.00	\$75.00	\$294.00
8	DCWD-008	3358 Deer Creek Dr	—	—	Pending	—	\$219.00	\$75.00	\$294.00
9	DCWD-009	3360 Deer Creek Dr	—	—	Pending	—	\$219.00	\$75.00	\$294.00
10	DCWD-010	3362 Deer Creek Dr	—	—	Pending	—	\$219.00	\$75.00	\$294.00
...	...	(Rows 11–240 continue in full workbook)	...	...	...	...	...	...	...
<b>TOTALS</b>							<b>=\$52,122 (at full install)</b>	<b>=\$17,850 (at full install)</b>	<b>=\$69,972 (at full install)</b>

\* Meter IDs and addresses above are illustrative placeholders. The full workbook contains blank rows for the District to populate with actual meter IDs, addresses, serial numbers, and installation dates. Status dropdown options: Pending | Installed | Issue - Follow Up.

## TAB 4 — REFERENCE & NOTES

Field	Value
<b>Endpoint Type</b>	Badger R900 Cell Pit MC 6 Wire 2 Ant — Item SP-N15371200
<b>SaaS License</b>	N360 Cell SaaS 1001-2500 Multi-Carrier — Item N13980803 (\$14.37/unit)
<b>Neptune Surcharge</b>	FMAGTRADESURNEP — \$2,304.00 flat (Ferguson Order No. 1688982, Jun 8 2026)
<b>Network</b>	Badger R900 Multi-Carrier Cellular AMI Network
<b>Compatible Meters</b>	Badger E-Series Ultrasonic (existing District meters)
<b>Equipment Cost / Unit</b>	\$219.00 blended (endpoint \$195 + SaaS \$14.37 + ~\$9.60 surcharge)
<b>ORC Labor Rate</b>	\$150.00/hr (budgeted rate)
<b>Install Time / Meter</b>	0.5 hours (30 minutes)
<b>Labor Cost / Meter</b>	\$75.00
<b>Total Cost / Meter</b>	\$294.00 (equipment + labor)
<b>Meters to Retrofit</b>	238 (240 units ordered — 2 spare units)
<b>Installer</b>	ORC Water Professionals — 11919 I-70 Frontage Rd N 116A, Wheat Ridge CO 80033
<b>Ferguson Contact</b>	Jordan Miller — jordan.miller@ferguson.com — 720-859-3060

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*This is a sample exhibit of the Installation Tracking Workbook. The full Excel workbook (DCWD\_AMI\_Installation\_Tracker.xlsx) contains all 240 data rows, live formulas, dropdown validation, and the complete Dashboard with real-time progress metrics.*

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# Ferguson Waterworks Order Confirmation

*Equipment Purchase — R900 Cell Pit MC Endpoints, SaaS License & Neptune Surcharge*

- Vendor: Ferguson Waterworks #1116 — Jordan Miller (jordan.miller@ferguson.com)
- Order No: 1688982 | Order Date: June 8, 2026
- Item SP-N15371200 — R900 Cell Pit MC 6 Wire 2 Ant — 240 units @ \$195.00
- Item N13980803 — N360 Cell SaaS Multi-Carrier — 240 units @ \$14.37
- Neptune Trade Surcharge (FMAGTRADESURNEP) — \$2,304.00 flat
- Net Total: \$52,552.80 | Tax: \$0.00 | Ship To: ORC Water Professionals, Wheat Ridge



FERGUSON WATERWORKS  
 17655 E 25TH DR  
 AURORA, CO 80011-4625

Phone: 720-859-3060  
 Fax: 303-366-0215

<b>Deliver To:</b> <b>From:</b> Jordan Miller jordan.miller@ferguson.com <b>Comments:</b>
--

14:11:51 JUN 08 2026

FERGUSON WATERWORKS #1116  
 Order Confirmation  
 Phone: 720-859-3060  
 Fax: 303-366-0215

**Order No:** 1688982  
**Order Date:** 06/08/26  
**Writer:** JDM

**Req Date:** 06/08/27

**Ship Via:** TMS Least COST  
**Terms:** NET 10TH PROX

**Sold To:** DEER CREEK WATER DISTRICT  
 7995 E PRENTICE AVE STE 103E  
 GREENWOOD VILLAGE, CO 80111

**Ship To:** ORC WATER PROFESSIONALS  
 11919 I-70 FRONTAGE RD N 116A  
 WHEAT RIDGE, CO 80033

**Cust PO#:**

**Job Name:** MC CELL ENDPOINTS

Item	Description	Quantity	Net Price	UM	Total
SP-N15371200	R900 CELL PIT MC 6 WIRE 2 ANT	240	195.000	EA	46800.00
N13980803	N360 CELL SAAS 1001-2500 MULTI-CARR	240	14.370	EA	3448.80
FMAGTRADESURNEP	NEPTUNE TRADE SURCHARGE FEE	1	2304.000	EA	2304.00
<b>Net Total:</b>					\$52552.80
<b>Tax:</b>					\$0.00
<b>Freight:</b>					\$0.00
<b>Total:</b>					\$52552.80

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