



MANITOU SPRINGS CITY COUNCIL SPECIAL MEETING AND WORK SESSION AGENDA

City Council meetings are held as hybrid, Zoom (remote) or
in-person at Memorial Hall.

Memorial Hall

606 Manitou Avenue

Manitou Springs, CO 80829

Remote: www.manitouspringsgov.com; click on meeting
link under "Government; City Council" page

Position	Name	Term Expires
Mayor	John G. Graham	January 6, 2026
At-Large	Judith Chandler	January 4, 2028
At-Large	John Shada	January 4, 2028
At-Large	Julie Wolfe	January 4, 2028
Ward 1	Mayor Pro Tem Natalie Johnson	January 6, 2026
Ward 2	Nancy Fortuin	January 6, 2026
Ward 3	Michelle Whetherhult	January 6, 2026

April 8, 2025

6:00 PM

THE CITY COUNCIL MAY TAKE ACTION ON ANY OF THE FOLLOWING AGENDA ITEMS AS PRESENTED OR MODIFIED PRIOR
TO OR DURING THE MEETING, AND ITEMS NECESSARY TO EFFECTUATE THE AGENDA ITEMS

A. CALL TO ORDER - WORK SESSION

B. ROLL CALL

C. APPROVAL OF AGENDA

D. DISCUSSION

1. Schneider Electric: Measurement & Verification Workshop
2. Presentation and Discussion on Improvement Options for the Ruxton Corridor - Update from February 11, 2025 Work Session
3. Proposal to Adopt a 20 MPH Speed Limit in Residential Neighborhoods

E. RECEIVE COUNCIL CORRESPONDENCE

F. CITY ADMINISTRATOR REPORT

G. ADJOURN WORK SESSION

H. CALL TO ORDER - SPECIAL SESSION

I. EXECUTIVE SESSION

1. An Executive Session to determine positions relative to matters that may be subject to negotiations; developing strategy for negotiations; developing strategy for negotiators; and instructing negotiators, pursuant to Section 5.1 (d) of the Manitou Springs Municipal Charter concerning the management and operation of the Incline.

ADJOURN

The City of Manitou Springs does not discriminate on the basis of disability in the admission to, access to, or operations of programs, services or activities. Reasonable accommodation will be provided to ensure equal access to all. Individuals who would like to request auxiliary aids or services should contact the ADA Coordinator at (719) 685-5481 or jfryer@manitouspringsco.gov. You may also contact the City Clerk's Office at cityclerk@manitouspringsco.gov or (719) 685-2554. Please provide a minimum of 3-5 days advance notice.



Memorandum

Title: Schneider Electric: Measurement & Verification Workshop

From: Water Department

To: Mayor and City Council

CC: City Administrator Denise Howell

Allocated Time: 30 Minutes

April 8, 2025

Purpose:

Schneider will present a walk-through of Measurement & Verification (M&V) protocols for the Energy Performance Contract project. A detailed outline will be provided of how Manitou Springs' M&V strategy and guarantees will look in the contract for the water meter and facility improvement project.

Background:

The Colorado Energy Office Energy Performance Contracting Program assists local governments to incorporate energy and water conservation measures with little or no upfront capital.

State statute requires a minimum of three years of measurement and verification. Should the City experience a shortfall in utility savings or revenue projections from the EPC scope of work during that time, Schneider is required to cover the shortfall and make the City financially whole. This workshop will outline in detail how M&V works for various scopes of work and systems installed in EPC projects. Should the City desire to continue a guarantee or M&V past year 3, Schneider will provide options to do so. Warranty and accuracy information is also provided by the water meter manufacturer (attached).

Pros and Cons:

Pros and Cons are provided in the presentation.

Fiscal Impact:

The project must pay for itself within a 20-year period or less. At minimum, the first 3 years of utility savings and additional water revenues are guaranteed per state statute. M&V and savings/revenue guarantees are included in the turnkey project cost for the first 3 years, and optional thereafter for an additional annual cost.

Workload Impact:



Significant.

Recommended Action:

There is no formal action to be taken.



Measurement & Verification Approaches

Manitou Springs Council Work Session 4-8-25

Schneider Electric

Workshop Outline

01

Introduction to Measurement & Verification (M&V)

02

M&V Overview by Option

03

Suggested M&V Strategy for Manitou Springs

Steps to Verify Project Performance



Pre-Implementation

- Define the scope of work
- Develop a project-specific Measurement & Verification (M&V) plan
- Define the utilities and operations baseline



Implementation

- Install and commission equipment and systems
- Conduct pre- and post-installation verification activities
- Provide Post Installation M&V Report to City and CO Energy Office



Post-Implementation

- Perform regular verification activities
- Provide Annual M&V Report for first 3 years per statute at minimum
- If a shortfall is found, Schneider is responsible for the difference

Why Measure & Verify?

**Required by Colorado
EPC statute**

**Verify savings
guarantee is met**

**Find additional savings
over time**

**Accurately assess
future energy savings**

**Allocate risks to
appropriate parties**

**Improve operations &
maintenance**

**Ensure utility savings
are achieved**

**Reduce uncertainties
to reasonable levels**

**Monitor equipment
performance**

Key Principles of an M&V Plan

Accurate

But balanced with cost

Complete

All effects of the project should be considered

Conservative

Savings should not be overstated

Consistent

But not identical

Relevant

Measured parameters are most critical to savings

Transparent

Clearly documented and fully disclosed



M&V Statutory Requirements in Colorado

- Annual Savings reports are required for the first three years in the Performance Period
- Reports will follow the template provided by the Colorado Energy Office
- Risk, Responsibility, and Performance Matrix will be included with the final M&V plan
- M&V plan and energy analysis will be submitted to and approved by the CEO
- Savings will be reported using both contract and actual utility rates for comparison purposes
- Site visits will occur at least semi-annually in the first year of the Performance Period and annually in additional years
- Charlie Stevens: Charlie.stevens@state.co.us
Arin Chakraverty: arin.chakraverty@state.co.us

M&V Timeline

2026

Construction complete and year 1 begins

2027

Year 1 reconciliation and year 2 begins

2028

Year 2 reconciliation, year 3 begins

2029

Year 3 reconciliation, statutory compliance complete
Optional ongoing services presented

Energy Savings

$$= (\text{Baseline Energy} - \text{Performance Period Energy}) \pm \text{Adjustments}$$

Baseline Energy Use

- Energy the facility or equipment would have used had the project not been implemented
- Includes routine adjustments to account for expected changes (weather, occupancy, billing days, etc.)

Performance Period Energy Use

- Energy use of the facility or equipment after the project is installed

Non-Routine Adjustments

- Accounts for unexpected physical or operational changes in the facility that impact energy usage

Water Revenue Generation

= (Revenue from new meters – Revenue from old meters)

Revenue from new meters

- Calculated revenue for the baseline amount of water consumption, if measured with the more accurate meters
- Water consumption held steady because meter accuracy is the only change being made by Schneider

Revenue from old meters

- Billed revenue from the baseline 12-month period

IPMVP Approaches to M&V

International Performance Measurement & Verification Protocol

Option A

Retrofit
Isolation: Key
Parameter
Measurement

Option B

Retrofit
Isolation: All
Parameter
Measurement

Option C

Whole
Facility/Meter
Measurement

Option D

Calibrated
Simulation

Schneider's role is to determine which option fits the scope and savings for each individual project.



Option A

Retrofit Isolation: Key Parameter Measurement

- Facility Improvement Measure (**FIM**)-level approach for systems that can be isolated
- Field measurements of key parameters are combined with estimated values to determine Baseline and Performance Period energy use and demand
- May measure only a sample of the affected system
- Frequency of measurements may be instantaneous, short-term or long-term

Typical Applications

- Lighting Retrofits, Plumbing Retrofits, Water Meter Replacements

Option A

Retrofit Isolation: Key Parameter Measurement

Advantages

- Cost-effective over the Performance Period
- Savings are not impacted by other building or behavioral changes
- FIMs with small savings can be verified in a cost-effective way

Disadvantages

- Because the retrofit is isolated, the exact savings number reported may not exactly match utility bill reduction or revenue increase. Changes in the use of new equipment are outside of Schneider's control and scope.
- If estimated parameters are inaccurate, savings will be inaccurate

Is option A a good fit?

Lighting – Typically yes, however Manitou's lighting savings are less than what it would cost for M&V

- Lighting energy use remains steady seasonally and for many years, making a one-time measurement a great and cost-effective method.
- Behavioral changes do not affect the savings calculations – only the reduction in wattage is being measured.

Water Meters - Yes

- Accuracy of the meters can be measured with minimal intrusion by measuring a sample representative of each meter class one time.
- Changes in water consumption, which are outside of this scope, do not skew savings.

Windows - No

- There is no way to isolate the influence of window improvements on building energy use.

This method is best suited for scope where the affected variable has a steady value, such as lighting wattage, water flow, and meter accuracy.

Option A Lighting Example

Savings is calculated as:

Measured Power



Existing Fixtures

—

Measured Power



Upgraded
Fixtures



Estimated Parameters



Such as burn hours
and HVAC impact



Contract Utility Rate
Applied



Verification that fixtures are still in place and operable may continue through the Performance Period.

Option A Water Meter Example

Savings is calculated as:

Measured Accuracy



Existing Meters



Measured Accuracy



Upgraded Meters



Baseline Water
Consumption



Comparing revenue gained
from increased accuracy



Contract Utility Rate
Applied



Analysis of water revenue may continue through the Performance Period.

Revenue Monitoring Plan

A Revenue Monitoring Plan is an optional ongoing service, where Schneider will monitor water use and revenue generated, and continue the Option A revenue guarantee.

Benefits:

- Additional oversight into your water revenue, trends, and potential issues that arise
- Semiannual analysis and reporting: revenue analysis, consumption analysis, accounts with concerning consumption, closed and opened accounts, and consumption distribution
- Schneider can also provide additional training on the Temetra system for billing staff if the City wishes to monitor trends on its own

Option B

Retrofit Isolation: All Parameter Measurement

- FIM-level approach for systems that can be isolated
- Field measurements of all parameters are taken to determine Baseline and Performance Period energy use and demand
- May measure only a sample of the affected system
- Frequency of measurements may be short-term or long-term

Typical Applications

- Motor/Pump Variable Speed Drive
- Solar PV generation



Is option B a good fit?

Lighting - No

- Continuous measurement of the energy used by lighting would require the installation of meters on each breaker, or the installation of a smart panel which could individually measure different building loads. The cost of this electrical work would dwarf the lighting savings and therefore is not recommended.
- Since this scope reduces lighting wattage and does not influence the *use* of lighting, the runtime hours would need to be normalized, or adjusted, for a fair comparison.

Water Meters - No

- Meter accuracy is the variable used to cash flow this project, and accuracy itself cannot be measured on a continuous basis (hourly) as required for option B.
- Windows - No
- There is no way to isolate the influence of window improvements on building energy use.

This method is best suited for a solar PV scope of work, as a dedicated meter is already part of that infrastructure.



Option C

Whole Facility/Meter Measurement

- Appropriate when FIMs are comprehensive and cannot be isolated for measurement
- Baseline utility data is used to build a linear regression model
- Performance Period utility data is compared with adjusted baseline data to determine savings
- Continuous tracking throughout the Performance Period
- Savings should be large (>10%) compared to the baseline usage

Typical Applications

- Comprehensive energy management program
- This method is best suited for individual utility meters with a large amount of savings, and a mix of scope that would change the building load seasonally, such as building automation.

Option D

Calibrated Simulation

- May be used to determine FIM-level or facility-level savings
- Computer model is used to determine Baseline and/or Performance Period usage

Typical Applications

- Buildings where 12 months of relevant utility data does not exist
- Where other measurement approaches are cost prohibitive
- This method is best suited for a project with building automation scope where some verification is desired, but savings are not high enough to justify option C.



Proposed M&V Plan for Manitou Springs

Facility Improvement Measure	Proposed M&V Option	Identified Risks	Responsibilities
Lighting: LED Interior/Exterior Upgrades	Non-Measured	Inaccuracies around burn hours, burnout percent, runtime, and demand diversity could impact savings Annual savings would be eclipsed by the cost to do Option A M&V so it is not recommended	-Schneider will read voltage for sample of pre & post fixtures -City must maintain fixtures -All assumptions, such as runtime, listed in the EPC contract
Windows	Non-Measured	Inherent uncertainty in savings projections	-Maintaining schedules and setpoints per the EPC contract -City must maintain windows
HVAC	Non-Measured	Adding electrical load; not advantageous to utility savings	-Maintaining schedules and setpoints per the EPC contract
Water Meters	Option A	-Variability around number of active meters -Customer behavioral changes -Water rate percentage increases each year	-City will maintain the new meters -Schneider will read flow for sample of pre & post meters -All assumptions, such as percent of water consumption for flow rate category, listed in the EPC contract
Telecom Savings	Non-Measured	Cannot guarantee the rates identified by Schneider has identified after Telecom contract expires, although the expectation is for rates to decrease	-City must renegotiate Telecom contract after expiration. Reach out to BlueWave.
Maintenance & Operating Savings	Non-Measured	Hard-cost savings can be accounted for, such as lightbulb replacements, maintenance, fuel costs for fleet vehicles. Soft-cost savings, such as wages and labor cannot be counted.	-Come to mutual agreement on M&O savings (usually 3% of construction cost) -City is responsible for maintaining all systems and components as Schneider designs

Supplementary Slides

Option B

Retrofit Isolation: All Parameter Measurement

Advantages

All parameters are either directly measured or have proxy measurements

Savings are not impacted by other building changes

Disadvantages

Because the retrofit is isolated, the exact savings number reported may not exactly match utility bill reduction

Installation of loggers or meters can be very costly for scope items other than solar

Option B Example

Savings is calculated as:

Metered Solar
Generation



Adjusted for Irradiance



Non-Routine
Adjustments



Contract Utility Rate
Applied



Adjusts for unexpected
down-time

Monitoring and measuring continues throughout the Performance Period.

Option C

Whole Facility/Meter Measurement

Advantages

Because the utility meter or sub-meters are used, savings results should be apparent on utility bills for effected meters provided there are no other facility changes

Schneider shares more risk than with Option A or D

Disadvantages

Savings may be impacted by changes outside of the project

Tracking facility and operating changes over time is much more costly than Option A

Is option C a good fit for Manitou Springs?

Lighting - No

- Savings on any individual meter are not large enough to qualify for option C. To qualify, an individual meter must save at least 10% of its baseline energy use, and at least \$4,000 per year. This is to ensure that any reduction seen on the meter is discernable as an effect of the project.
- Savings are not large enough to justify the cost of this method.

Water Meters - No

- Any changes in water consumption would skew savings results.

Windows - No

- Savings are not large enough to qualify for option C, or to justify the cost.

Option C Example

Savings is calculated as:

Baseline Utility Usage



—

Performance Period Utility Usage



+

Non-Routine Adjustments



Contract Utility Rate Applied



Adjusted for Expected Changes



Adjusts for Unexpected Changes

Monitoring and measuring continues throughout the Performance Period.

Option D

Calibrated Simulation

Advantages

- Can account for changes outside of the project such as facility and operational changes
- Can be applied on new buildings without 12 months of utility data

Disadvantages

- Requires the skill to create a well-calibrated energy model
- Savings results may not be fully apparent in utility bills

Is option D a good fit for Manitou Springs?

Lighting - No

- Measuring the lighting wattage over time to enter into the building model would be unnecessary and expensive. Option A would give one-time wattage readings and be more valuable.

Water Meters - No

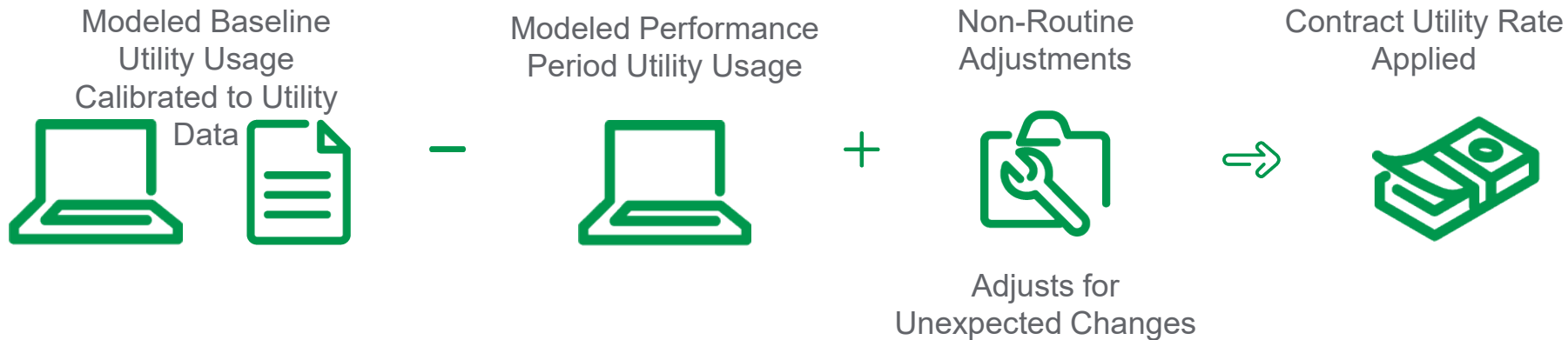
- Measuring the meter accuracy over time to enter into the building model would be unnecessary and expensive. Option A would give one-time accuracy readings and be more valuable.

Windows - No

- Windows do not have a variable to measure and input into a model after being installed. The window specs will remain constant.
- Savings do not justify the cost of this method.

Option D Example

Savings is calculated as:



Monitoring continues throughout the Performance Period.

Water Meter Warranty Information - Manufacturer

If Diehl Metering establishes that the Product has a defect that is covered by this Warranty, based on a claim submitted by a customer in compliance with the provisions set forth under “Claim Handling” below (“Covered Claim”), Diehl Metering will remedy such defect as set forth below:

- If the Covered Claim is received by Diehl Metering within the first 10 year of the Warranty Period, Diehl Metering will, at its sole discretion, repair or replace such Product free of charge, and the customer shall bear the entire costs of the removal of the defective Product and installation of the repaired or replaced Product.
- If the Covered Claim is received by Diehl Metering after the 10th anniversary of the beginning of the Warranty Period and on or prior to the 14th anniversary thereof, Diehl Metering will sell to the customer a replacement Product at a discount of 60% of the then valid list price of such replacement Product.
- If the Covered Claim is received by Diehl Metering after the 14th anniversary of the beginning of the Warranty Period and on or prior to the 17th anniversary thereof, Diehl Metering will sell to the customer a replacement Product at a discount of 40% of the then valid list price of such replacement Product.
- If the Covered Claim is received by Diehl Metering after the 17th anniversary of the beginning of the Warranty Period and on or prior to the 20th anniversary thereof, Diehl Metering will sell to the customer a replacement Product at a discount of 20% of the then valid list price.

Water Meter Accuracy Information - Manufacturer

Meter Accuracy

The Products will meet or exceed meter accuracy of +/-1.5% between the “minimum flow rate” to “maximum flow rate” for twenty (20) years from date of shipment:

<u>Meter size</u>	<u>Flow rates</u>
5/8" x 1/2"	0.1 - 20 gpm
5/8" x 3/4"	0.1 - 20 gpm
3/4" S (5/8" x 3/4")	0.1 - 30 gpm
3/4" x 9"	0.1 - 30 gpm
1"	0.4 - 55 gpm

Life Is On

Schneider
Electric

Life Is On

Schneider
Electric

Limited Extended Warranty

Applicability

This Limited Extended Warranty (this “Limited Warranty”) is applicable to all Diehl Metering HYDRUS Ultrasonic water meters, sizes 5/8” x 1/2”, 5/8” x 3/4”, 3/4” S (5/8” x 3/4”), 3/4” x 9”, and 1”, including HYDRUS System Components (Electronics, Battery, Transducers and Register) which are marked on the delivery note or the order confirmation as “Extended Warranty” (hereinafter referred to as a “Product”).

Warranty, Material and Workmanship

Diehl Metering GmbH (“Diehl Metering”) warrants, for a period of twenty (20) years plus an additional grace period of three (3) months calculated from the date of manufacture of the Products (the “Warranty Period”), that (a) at the time of delivery, Products comply with the applicable specifications and be free from defects in material and workmanship, and (b) Product housings are free from lead. Claims under this Limited Warranty are subject to the restrictions and conditions set forth herein and must be made in accordance with the procedures set forth under “Claim Handling” below.

Remedy

If Diehl Metering establishes that the Product has a defect that is covered by this Warranty, based on a claim submitted by a customer in compliance with the provisions set forth under “Claim Handling” below (“Covered Claim”), Diehl Metering will remedy such defect as set forth below:

- If the Covered Claim is received by Diehl Metering within the first 10 year of the Warranty Period, Diehl Metering will, at its sole discretion, repair or replace such Product free of charge, and the customer shall bear the entire costs of the removal of the defective Product and installation of the repaired or replaced Product.
- If the Covered Claim is received by Diehl Metering after the 10th anniversary of the beginning of the Warranty Period and on or prior to the 14th anniversary thereof, Diehl Metering will sell to the customer a replacement Product at a discount of 60% of the then valid list price of such replacement Product.
- If the Covered Claim is received by Diehl Metering after the 14th anniversary of the beginning of the Warranty Period and on or prior to the 17th anniversary thereof, Diehl Metering will sell to the customer a replacement Product at a discount of 40% of the then valid list price of such replacement Product.
- If the Covered Claim is received by Diehl Metering after the 17th anniversary of the beginning of the Warranty Period and on or prior to the 20th anniversary thereof, Diehl Metering will sell to the customer a replacement Product at a discount of 20% of the then valid list price.

If Diehl Metering elects to replace any defective Product, it may replace such Product with the same Product or a successor Product that may be new or refurbished. If Diehl Metering elects to repair any defective Product, it is free to determine the manner in which such repair is performed and may use new or reconditioned parts. Repaired or replaced Products remain covered under this Warranty until the later of the expiration of the original Warranty Period or 90 days from the date of the return shipment of the repaired or replaced Product to the customer.

Meter Accuracy

The Products will meet or exceed meter accuracy of +/-1.5% between the “minimum flow rate” to “maximum flow rate” for twenty (20) years from date of shipment:

<u>Meter size</u>	<u>Flow rates</u>
5/8" x 1/2"	0.1 - 20 gpm
5/8" x 3/4"	0.1 - 20 gpm
3/4" S (5/8" x 3/4")	0.1 - 30 gpm
3/4" x 9"	0.1 - 30 gpm
1"	0.4 - 55 gpm

Claim Handling

To exercise its rights under this Warranty, the customer must notify Diehl Metering in writing at metering-usa-info@diehl.com and provide the name of the Product, the serial number, the specific defect, other relevant details, and customer's contact information. The customer may include test results, as long as such test results adhere to the standards set forth under “Testing” below. In case the customer does not include test results, the submission of a claim by the customer shall be deemed as the customer's consent to the performance of such tests by Diehl Metering, as Diehl Metering deems necessary or advisable, at the sole expense of the customer. Any claim submitted by customer under this Warranty shall include a copy of the applicable proof of purchase and delivery note.

At Diehl Metering's sole discretion, the defective Product shall be shipped by the customer prepaid F.O.B. to the nearest Diehl Metering factory or distribution center, as communicated by Diehl Metering from time to time (Incoterms 2020). Any return delivery has to be agreed and coordinated with Diehl Metering beforehand.

If requested by Diehl Metering, the customer shall furnish proof that the Products were installed by customer or an authorized installer in full compliance with the Product specifications, the installation manual, or any other written instructions by Diehl Metering, and provide Diehl Metering with any other information reasonably required by Diehl Metering.

Testing

Test results must be obtained according to AWWA standards and the HYDRUS Testing Instruction, which can be obtained from Diehl Metering.

General Provisions

This Warranty is not transferable and shall only apply to the original customer who bought the respective Products from Diehl Metering or the original customer of an authorized Diehl Metering reseller.

Warranty Limitations

This Warranty shall not apply

- to Products repaired, replaced modified, altered or tampered with by the customer or any other third party without the prior written approval from Diehl Metering,
- if the Products have not been installed in compliance with the Product's installation manual provided or Diehl Metering's written instructions,
- if the Products have not been operated, used, stored, or maintained in accordance with the Product specifications, technical literature or any other written instructions provided by Diehl Metering with respect to the Products,
- to Products connected to, or integrated or combined with, another product without the prior written approval of Diehl Metering or used with substances other than potable water, or with water containing dirt, debris, deposits or other impurities,
- to Products that have been subjected to improper periodic testing or exposed to conditions other than those detailed in the Product specifications or any other written instructions with respect to the Product,
- if the defect is caused by damage or destruction resulting from the action or inaction of any person other than Diehl Metering, vandalism, accidents, chemical contamination or physical impact, exposure to inappropriate environments by acts of nature or other events beyond Diehl Metering's control.

Descriptions of the Products and information regarding the Products, regardless of form or origin, shall not imply any warranties. EXCEPT FOR THE WARRANTIES EXPLICITLY SET FORTH HEREIN, DIEHL METERING MAKES NO OTHER WARRANTIES WHATSOEVER, AND ANY AND ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXPRESSLY DISCLAIMED.

This Warranty is the only warranty provided by Diehl Metering with respect to the Products. No representative, dealer or any other person is authorized to make any additional or different warranty, representation, condition or promise on behalf of Diehl Metering with respect to the Products. No terms or conditions other than those stated herein or provided by applicable law, and no oral or written agreement, understanding, promise, or commitment, may in any way modify this warranty without Diehl Metering's express prior written consent, and no such modification may be relied upon by any party or under any circumstances other than the party for which, and the circumstances under which, such modification is granted.

If the Products are consumer Products, federal law does not allow an exclusion of implied warranties. To the extent certain customers are entitled to implied warranties under federal law, to the extent permitted by applicable law, they are limited to the duration of this Warranty. Some states do not allow limitations or exclusions on implied warranties or on the duration of an implied warranty or on the limitation or exclusion of incidental or consequential damages, so the above limitation(s) or exclusion(s) may not apply to certain customers. This Warranty gives such customers specific legal rights. Certain customers may have other rights which may vary from state to state.

Liability Limitations

THE REMEDIES SET FORTH HEREIN SHALL BE THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDY AND DIEHL METERING'S ENTIRE LIABILITY FOR ANY BREACH OF THIS WARRANTY.

THE LIABILITY OF DIEHL METERING FOR ANY CLAIMS, OBLIGATIONS AND WARRANTIES OUT OF OR IN CONNECTION WITH THE PRODUCTS SHALL BE LIMITED TO THE TOTAL AMOUNT PAID BY THE CUSTOMER FOR THE PRODUCT GIVING RISE TO THE RESPECTIVE CLAIM.

IN NO EVENT SHALL DIEHL METERING BE LIABLE EITHER IN TORT OR IN CONTRACT FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION LOST PROFITS, LOST REVENUE, LOSS OF USE, DIMINUTION IN VALUE, ARISING OUT OF OR RELATING TO ANY BREACH OF THIS WARRANTY, WHETHER OR NOT THE POSSIBILITY OF SUCH DAMAGES HAS BEEN DISCLOSED IN ADVANCE BY THE CUSTOMER OR COULD HAVE BEEN REASONABLY FORESEEN BY DIEHL METERING, REGARDLESS OF THE LEGAL OR EQUITABLE THEORY (CONTRACT, TORT OR OTHERWISE) UPON WHICH THE CLAIM IS BASED, AND NOTWITHSTANDING THE FAILURE OF ANY AGREED OR OTHER REMEDY OF ITS ESSENTIAL PURPOSE.

Unjustified Claims

In case of claims that are not covered by this Warranty, as determined by Diehl Metering, all costs for testing, repair, replacement and shipping incurred by Diehl Metering shall be reimbursed by the customer to Diehl Metering within a reasonable time after the customer has been notified by Diehl Metering.

Applicable Law

This Warranty shall solely be subject to the laws of the state of New York (United States) excluding any conflicts of laws provisions. In the event of a conflict with the general terms and conditions of either party, the delivery note or order confirmation, this Warranty shall prevail. All disputes arising out of or in connection with this Warranty shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce (the "Rules") by three arbitrators appointed in accordance with the Rules. The place of arbitration shall be New York City, New York. The arbitration shall be held in the English language.

Severability

If any provision contained in this Warranty is held by final judgment of a court of competent jurisdiction to be invalid, illegal or unenforceable, such invalid, illegal or unenforceable provision shall be severed from the remainder of this Warranty, and the remainder of this Warranty shall be enforced. In addition, the invalid, illegal or unenforceable provision shall be deemed to be automatically modified, and, as so modified, to be included in this Warranty, such modification being made to the minimum extent necessary to render such provision valid, legal and enforceable.

Limited Extended Warranty

(1 ½”, 2”)

Applicability

This Limited Extended Warranty (this “Limited Warranty”) is applicable to all Diehl Metering HYDRUS Ultrasonic water meters, sizes 1 ½” and 2”, including HYDRUS System Components (Electronics, Battery, Transducers and Register) which are marked on the delivery note or the order confirmation as “Extended Warranty” (hereinafter referred to as a “Product”).

Warranty, Material and Workmanship

Diehl Metering GmbH (“Diehl Metering”) warrants, for a period of 10 (Ten) years plus an additional grace period of three (3) months calculated from the date of manufacture of the Products (the “Warranty Period”), that (a) at the time of delivery, Products comply with the applicable specifications and be free from defects in material and workmanship, and (b) Product housings are free from lead. Claims under this Limited Warranty are subject to the restrictions and conditions set forth herein and must be made in accordance with the procedures set forth under “Claim Handling” below.

Remedy

If Diehl Metering establishes that the Product has a defect that is covered by this Warranty, based on a claim submitted by a customer in compliance with the provisions set forth under “Claim Handling” below (“Covered Claim”), Diehl Metering will remedy such defect as set forth below:

- If the Covered Claim is received by Diehl Metering within the first 10 years of the Warranty Period, Diehl Metering will, at its sole discretion, repair or replace such Product free of charge, and the customer shall bear the entire costs of the removal of the defective Product and installation of the repaired or replaced Product.

If Diehl Metering elects to replace any defective Product, it may replace such Product with the same Product or a successor Product that may be new or refurbished. If Diehl Metering elects to repair any defective Product, it is free to determine the manner in which such repair is performed and may use new or reconditioned parts. Repaired or replaced Products remain covered under this Warranty until the later of the expiration of the original Warranty Period or 90 days from the date of the return shipment of the repaired or replaced Product to the customer.

Meter Accuracy

The Products will meet or exceed meter accuracy of +/-1.5% between the “minimum flow rate” to “maximum flow rate” for ten (10) years from date of shipment:

1 1/2”	0.6 - 100 gpm
2”	0.8 - 160 gpm

Claim Handling

To exercise its rights under this Warranty, the customer must notify Diehl Metering in writing at metering-usa-info@diehl.com and provide the name of the Product, the serial number, the specific defect, other relevant details, and customer's contact information. The customer may include test results, as long as such test results adhere to the standards set forth under "Testing" below. In case the customer does not include test results, the submission of a claim by the customer shall be deemed as the customer's consent to the performance of such tests by Diehl Metering, as Diehl Metering deems necessary or advisable, at the sole expense of the customer. Any claim submitted by customer under this Warranty shall include a copy of the applicable proof of purchase and delivery note.

At Diehl Metering's sole discretion, the defective Product shall be shipped by the customer prepaid F.O.B. to the nearest Diehl Metering factory or distribution center, as communicated by Diehl Metering from time to time (Incoterms 2020). Any return delivery has to be agreed and coordinated with Diehl Metering beforehand.

If requested by Diehl Metering, the customer shall furnish proof that the Products were installed by customer or an authorized installer in full compliance with the Product specifications, the installation manual, or any other written instructions by Diehl Metering, and provide Diehl Metering with any other information reasonably required by Diehl Metering.

Testing

Test results must be obtained according to AWWA standards and the HYDRUS Testing Instruction, which can be obtained from Diehl Metering.

General Provisions

This Warranty is not transferable and shall only apply to the original customer who bought the respective Products from Diehl Metering or the original customer of an authorized Diehl Metering reseller.

Warranty Limitations

This Warranty shall not apply

- to Products repaired, replaced modified, altered or tampered with by the customer or any other third party without the prior written approval from Diehl Metering,
- if the Products have not been installed in compliance with the Product's installation manual provided or Diehl Metering's written instructions,
- if the Products have not been operated, used, stored, or maintained in accordance with the Product specifications, technical literature or any other written instructions provided by Diehl Metering with respect to the Products,
- to Products connected to, or integrated or combined with, another product without the prior written approval of Diehl Metering or used with substances other than potable water, or with water containing dirt, debris, deposits or other impurities,
- to Products that have been subjected to improper periodic testing or exposed to conditions other than those detailed in the Product specifications or any other written instructions with respect to the Product,

- if the defect is caused by damage or destruction resulting from the action or inaction of any person other than Diehl Metering, vandalism, accidents, chemical contamination or physical impact, exposure to inappropriate environments by acts of nature or other events beyond Diehl Metering's control.

Descriptions of the Products and information regarding the Products, regardless of form or origin, shall not imply any warranties. EXCEPT FOR THE WARRANTIES EXPLICITLY SET FORTH HEREIN, DIEHL METERING MAKES NO OTHER WARRANTIES WHATSOEVER, AND ANY AND ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXPRESSLY DISCLAIMED.

This Warranty is the only warranty provided by Diehl Metering with respect to the Products. No representative, dealer or any other person is authorized to make any additional or different warranty, representation, condition or promise on behalf of Diehl Metering with respect to the Products. No terms or conditions other than those stated herein or provided by applicable law, and no oral or written agreement, understanding, promise, or commitment, may in any way modify this warranty without Diehl Metering's express prior written consent, and no such modification may be relied upon by any party or under any circumstances other than the party for which, and the circumstances under which, such modification is granted.

If the Products are consumer Products, federal law does not allow an exclusion of implied warranties. To the extent certain customers are entitled to implied warranties under federal law, to the extent permitted by applicable law, they are limited to the duration of this Warranty. Some states do not allow limitations or exclusions on implied warranties or on the duration of an implied warranty or on the limitation or exclusion of incidental or consequential damages, so the above limitation(s) or exclusion(s) may not apply to certain customers. This Warranty gives such customers specific legal rights. Certain customers may have other rights which may vary from state to state.

Liability Limitations

THE REMEDIES SET FORTH HEREIN SHALL BE THE CUSTOMER'S SOLE AND EXCLUSIVE REMEDY AND DIEHL METERING'S ENTIRE LIABILITY FOR ANY BREACH OF THIS WARRANTY.

THE LIABILITY OF DIEHL METERING FOR ANY CLAIMS, OBLIGATIONS AND WARRANTIES OUT OF OR IN CONNECTION WITH THE PRODUCTS SHALL BE LIMITED TO THE TOTAL AMOUNT PAID BY THE CUSTOMER FOR THE PRODUCT GIVING RISE TO THE RESPECTIVE CLAIM.

IN NO EVENT SHALL DIEHL METERING BE LIABLE EITHER IN TORT OR IN CONTRACT FOR ANY INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION LOST PROFITS, LOST REVENUE, LOSS OF USE, DIMINUTION IN VALUE, ARISING OUT OF OR RELATING TO ANY BREACH OF THIS WARRANTY, WHETHER OR NOT THE POSSIBILITY OF SUCH DAMAGES HAS BEEN DISCLOSED IN ADVANCE BY THE CUSTOMER OR COULD HAVE BEEN REASONABLY FORESEEN BY DIEHL METERING, REGARDLESS OF THE LEGAL OR EQUITABLE THEORY (CONTRACT, TORT OR OTHERWISE) UPON WHICH THE CLAIM IS BASED, AND NOTWITHSTANDING THE FAILURE OF ANY AGREED OR OTHER REMEDY OF ITS ESSENTIAL PURPOSE.

Unjustified Claims

In case of claims that are not covered by this Warranty, as determined by Diehl Metering, all costs for testing, repair, replacement and shipping incurred by Diehl Metering shall be reimbursed by the customer to Diehl Metering within a reasonable time after the customer has been notified by Diehl Metering.

Applicable Law

This Warranty shall solely be subject to the laws of the state of New York (United States) excluding any conflicts of law's provisions. In the event of a conflict with the general terms and conditions of either party, the delivery note or order confirmation, this Warranty shall prevail. All disputes arising out of or in connection with this Warranty shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce (the "Rules") by three arbitrators appointed in accordance with the Rules. The place of arbitration shall be New York City, New York. The arbitration shall be held in the English language.

Severability

If any provision contained in this Warranty is held by final judgment of a court of competent jurisdiction to be invalid, illegal or unenforceable, such invalid, illegal or unenforceable provision shall be severed from the remainder of this Warranty, and the remainder of this Warranty shall be enforced. In addition, the invalid, illegal or unenforceable provision shall be deemed to be automatically modified, and, as so modified, to be included in this Warranty, such modification being made to the minimum extent necessary to render such provision valid, legal and enforceable.

evoQ₄ RB Electromagnetic Meter with Replaceable Battery

Size 1½" to 12"

Operation

The evoQ₄ is a battery powered electromagnetic water meter that is suitable for a wide range of metering applications. Using Faraday's law of electromagnetic induction, two magnets provide a magnetic field within the pipe; two electrodes measure the induced voltage that is proportional to the flow of conductive water through the field in the pipe. Every 0.5 seconds the measurement is taken and the totalized volume is calculated and updated on the LCD display. The meter allows replacement battery pack exchanges.

Application

The meter is for use only with potable cold water up to 120°F. The meter will typically register at +/-0.75% accuracy at normal and high flows and better than 95% accuracy at extended low flows. The evoQ₄ product line is suited for metering utility customer services for potable water. With the addition of outputs described below, the meter can fulfill a number of distribution management roles as well.

Pulse or encoder output

The meter can be fitted with a pulse output device that can be attached to a radio transceiver module or a data logger. The pulse output can be programmed in the factory to meet the needs of the utility. For utilities preferring encoded output technologies, an encoder module is available for interface with AMR or AMI systems.

Remote display

The meter can be fitted with a remote display. A two channeled output can provide both forward and reverse pulses.

Connections

The evoQ₄ comes in AWWA C701 Class II Turbine meter lay lengths. The flanges are epoxy coated cast iron to reduce weight and prevent corrosion. The 1½" and 2" come with oval flanges and the 3"- 12" come with a round flange. All flanges conform to ANSI B16.1 Class 125 standards. Allow for 5 pipe diameters of straight pipe upstream and 3 pipe diameters of straight pipe downstream for optimum performance.



The evoQ₄ is a single meter that meets the needs of traditional turbine, compound, single jet and magnetic meters. The meter allows replacement battery pack exchanges.

FEATURES AND BENEFITS

3 cell battery pack: Extends meter functional life
No moving parts: Maintenance free.
0.5 second sampling rate: Highest accuracy.
Wide measuring range: Suitable for all commercial applications.
Simple installation: No additional training required.

Pulse or encoder connectivity: Pre-equipped or retrofitted for your AMR and telemetry needs.
AWWA lay lengths: Simple changeout.
IP68 sealed: Provides long, trouble-free life.
NSF61 Annex G listed: Zero lead contaminants.

LCD

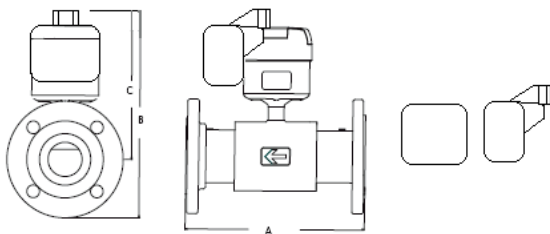
Bright, large and easy-to-read LCD incorporating totalized volume and a reference flow-rate indicator. Alarm functions provide in-situ status ensuring no loss in measuring continuity. An IP68 seal ensures the meter electronics are safely protected providing long term reliability.

Materials

Body: Stainless steel grade 304
Flow tube: Stainless steel grade 316
Liner: Polyethylene epoxy
Electrodes: Stainless steel grade 316
Flanges: Epoxy coated cast iron
Register: Stainless steel with glass lens
Register housing/lid: UV-resistant plastic
Environmental class: IP68 hermetically sealed unit waterproof to 30 ft depth

Dimensions and net weight

Meter Size	A		B		C		Weight	
	in	(mm)	in	(mm)	in	(mm)	lbs	(kg)
1.5"	13	(330)	10.8	(274.3)	8.2	(203.3)	10.5	(4.8)
2"	10	(254.0)	11.24	(285.5)	8.12	(206.2)	11.0	(5)
3"	12	(304.8)	12.27	(311.7)	8.52	(216.3)	22.5	(10)
4"	14	(355.6)	13.22	(335.8)	8.72	(221.5)	35.5	(16)
6"	18	(457.2)	15.32	(389.1)	9.82	(249.4)	55.5	(25)
8"	20	(508.0)	17.16	(435.9)	10.71	(272.0)	81.5	(37)
10"	17.75	(450)	19.50	(495.3)	11.50	(292.1)	120.0	(55)
12"	19.7	(500)	21.00	(533.4)	11.50	(292.1)	159.0	(72)



Find Out More

WaterMeters@honeywell.com
 www.elsteramcowater.com

Honeywell Smart Energy

10 SW 49th Avenue, Bldg. 100
 Ocala, FL 34474
 T +1 800 874 0890
 F +1 352 368 1950

1100 Walker's Line, Suite 302
 Burlington, Ontario L7N 2G3
 T 866 703 7582
 F 905 634 6705
 www.HoneywellSmartEnergy.com

Performance	Inches	1.5	2	3	4	6	8	10	12
	mm	40	50	80	100	150	200	250	300
> 95% Accuracy	GPM	0.25	0.25	0.6	1.7	4	8	32	32
	m³/h	0.06	0.06	0.14	0.4	0.9	1.8	7.3	7.3
98.5% - 101.5% Accuracy	GPM	1-130	1-220	2-550	4-880	8-1400	16-3500	50-5500	65-5500
	m³/h	0.23-30	0.23-50	0.5-125	0.9-200	1.8-318	3.6-795	11.4-1249	14.8-1249
Maximum flow	GPM	130	220	550	880	1400	3500	5500	5500
	m³/h	30	50	125	200	318	795	1249	1249
Max. operating pressure	psi	175	230	230	230	230	230	150	150
	Bar	12	16	16	16	16	16	10	10

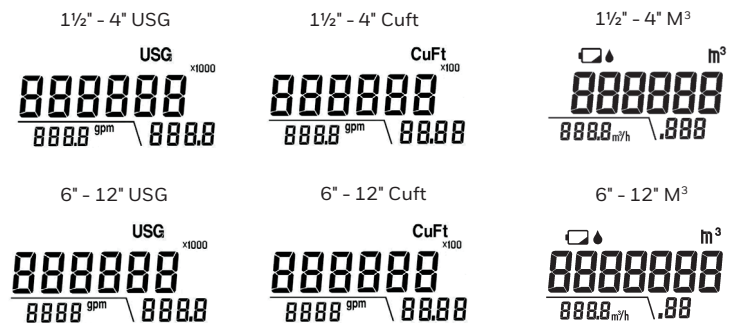
Low-Battery
 The indicator will blink when the meter has approximately 3 months working life remaining.

End of Life Battery
 Measurement stopped. The display will go blank. The last recorded value is retained in memory. When the battery is replaced, the meter and display will operate normally. Typical life per replaceable battery pack:
 1 ½" to 4" - Ten years
 6" - Seven years
 8" to 12" - Five years.

No-Water
 The indicator will blink when there is an empty pipe condition or no water in the meter.

Flow Rate
 If water is flowing in the reverse direction a minus sign is displayed to the left of the value.

Net Volume
 Any reverse flow is subtracted from the volume display. The top line displays billable units with the multiplier shown in upper right corner. Measurement resolution is provided in the lower right for testing.



SEW-DS-NAEN-EVOQ4RB | 08/2017
 Supercedes evoQ4RB/05-13
 © 2017 Honeywell International Inc.

Honeywell

evoQ₄ Electromagnetic Fire Service Meter

Size 1½" to 8"

Operation

The evoQ₄ is a battery powered electromagnetic water meter that is suitable for a wide range of metering applications. Using Faraday's law of electromagnetic induction, two magnets provide a magnetic field within the pipe that measures the flow of the conductive water. There is no mechanical assembly that could restrict flows for fire service; without moving parts regular maintenance is also not required. The meter is designed for 10 years of continuous operation with no battery changes necessary. With a sampling rate of 0.5 seconds, the evoQ₄ has excellent accuracy over a wide flow range.

Application

The meter is for use only with potable cold water up to 120°F. The meter will typically register at +/-0.75% accuracy at normal and high flows and better than 95% accuracy at low flows. Accuracy tests are made before shipment, so no adjustments need to be made before installation. The approval of FM1044 and/or UL SU327B indicates this meter can be used in lieu of AWWA C703 mechanical fire assemblies.

Pulse or encoder output

The meter can be fitted with a pulse output device that can be attached to a radio transceiver module or a data logger. The pulse output can be programmed in the factory to meet the needs of the utility. For utilities preferring encoded output technologies, an encoder module is available for interface with AMR systems.

Remote display

The meter can be fitted with a remote display. A two channeled output can provide both forward and reverse pulses.

Connections

The evoQ₄ comes in AWWA C701 Class II Turbine meter lay lengths. The flanges are epoxy coated cast iron to reduce weight and prevent corrosion. All flanges conform to ANSI B16.1 Class 125 standards. Allow for 5 pipe diameters of straight pipe upstream and 3 pipe diameters of straight pipe downstream for maximum performance. Spool pieces are available to fill typical mechanical FSM assembly lay lengths.

FEATURES AND BENEFITS

10 year continuous life: No need for costly and time-consuming replacement.

No moving parts: Maintenance free.

0.5 second sampling rate: Highest accuracy.

Wide measuring range: Suitable for all commercial applications.

Simple installation: No additional training required.

Pulse or encoder connectivity: Pre-equipped or retrofitted for your AMR and telemetry needs.

AWWA lay lengths: Simple changeout.

IP68 sealed: Provides long, trouble-free life.

NSF61 Annex G listed: Zero lead contaminants.



The 3" – 8" evoQ₄ FSM comes with a full FM Standard 1044 approval and UL SU327B listing for use as a fire service instrument. 1½ and 2" meters include the UL listing.

Replace large mechanical fire service assemblies with an easily fit solid state meter.

LCD display

Bright, large and easy-to-read LCD display incorporating integrating volume and a reference flow-rate indicator. Alarm functions provide in-situ status ensuring no loss in measuring continuity. An IP68 seal ensures the meter electronics are safely protected providing long-term reliability.

Materials

Body: Stainless steel grade 304

Flow tube: Stainless steel grade 316

Liner: Polyethylene epoxy

Electrodes: Stainless steel grade 316

Flanges: Epoxy coated cast iron

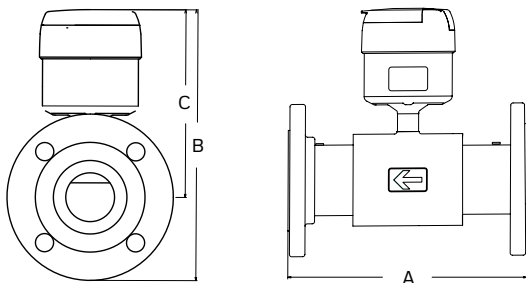
Register: Stainless steel with glass lens

Register housing/lid: UV-resistant plastic

Environmental class: IP68 hermetically sealed unit waterproof to 30 ft depth

Dimensions and net weight

Meter Size	A	B	C	Weight
	in (mm)	in (mm)	in (mm)	lbs (kg)
1.5"	13 (330)	8 (203.2)	6 (152)	9 (4.1)
2"	17 (432)	8 (203.2)	6 (152)	11.5 (5.2)
3"	12 (304.8)	12.27 (311.7)	8.52 (216.3)	22.5 (10)
4"	14 (355.6)	13.22 (335.8)	8.72 (221.5)	35.5 (16)
6"	18 (457.2)	15.32 (389.1)	9.82 (249.4)	55.5 (25)
8"	20 (508.0)	17.16 (435.9)	10.71 (272.0)	81.5 (37)



Find Out More

WaterMeters@honeywell.com

www.elsteramcowater.com

Honeywell Smart Energy

10 SW 49th Avenue, Bldg. 100

Ocala, FL 34474

T +1 800 874 0890

F +1 352 368 1950

1100 Walker's Line, Suite 302

Burlington, Ontario L7N 2G3

T 866 703 7582

F 905 634 6705

www.HoneywellSmartEnergy.com

LCD functions

A low-battery indicator appears when the battery voltage is closing towards the end of its useful life. A no-water indicator blinks indicating an empty pipe condition such as, no water within the meter. The flow rate is displayed in forward and reverse; if water is flowing in the reverse direction a minus sign is displayed. The net volume of water measured is displayed at all times.

Low-Battery
The indicator blinks when the meter has approximately 3 months working life remaining.

End of Life Battery
Measurement stopped. The display will go blank. The indicator appears permanently when the meter life expires. Data is displayed for up to 9 months.

No-Water
The indicator will blink when there is an empty pipe condition.

Flow Rate
If water is flowing in the reverse direction a minus sign is displayed to the left of the value.

Net Volume
Any reverse flow is subtracted from the volume display. The top line displays billable units with the multiplier shown in upper right corner. Measurement resolution is provided in the lower right for testing.



Performance	Inches mm	1.5 40	2 50	3 80	4 100	6 150	8 200
> 95% Accuracy	GPM	0.25	0.25	0.6	1.7	4	8
	m ³ /h	0.057	0.057	0.14	0.4	0.9	1.8
*98.5% - 101.5% Accuracy	GPM	1-130	1-170	2-550	4-880	8-1400	16-3500
	m ³ /h	0.227-30	0.227-39	0.5-125	0.9-200	1.8-318	3.6-795
**Maximum flow	GPM	130	170	550	880	1400	3500
	m ³ /h	30	39	125	200	318	795
***Max. operating pressure	psi	175	175	230	230	230	230
	Bar	12	12	16	16	16	16

*UL listing covers normal flow ranges (98.5 - 101.5% accuracy)

**Typical maximum registered flow. evoQ4 is unaffected by deluge flows delivered for fire services

***UL listing applies to operating pressure of 175psi



SEW-DS-NAEN-EVOQ4FSM | 08/2018

Supersedes evoQ4FSM/05-13

© 2018 Honeywell International Inc.

Honeywell

evoQ₄ Outputs

evoQ₄ Pulse Output Module

Operation

The evoQ₄ pulse module provides a reliable output communication for connection to all common data management devices, including data-loggers, AMR/I and SCADA systems. The pulse unit is self powered using its own batteries and does not affect the meter life.

Communication between the meter and the pulse module is via an infra-red LED and an optical sensor. A rubber grommet maintains a clear pathway.

Installation

The pulse unit can be fitted at any time to the evoQ₄ meter, either pre-shipment or in-the-field. Simply connect the pulser to the meter for instant functionality. The unit is fully hermetically sealed and is suitable for use in flooded pits up to a water depth of 30 feet. See evoQ₄ installation operation manual for details.

Pulse output

The evoQ₄ pulser features a dual channel, bi-directional capable pulse output and alarm indicator.

Alarm¹

The alarm output channel can provide an output signal to indicate:

- Meter low battery
- Pulser low battery
- Measurement stopped / No water
- Tamper (pulser removed from meter)



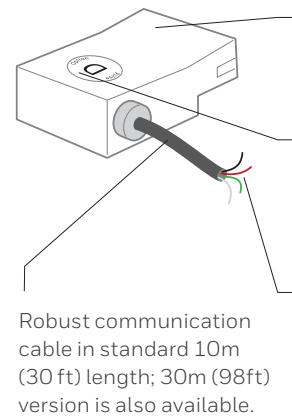
SPECIFICATIONS	
Operating temperature	15 °F to 120 °F, -10 °C to +55 °C
Pulse output signal	Open drain NPN current sink
Maximum load current	20mA
Maximum load voltage	30V DC
Power	Battery powered, 10 years
Maximum pulse transmitter distance	200 meters, 650 feet
Standard cable length	10 meters (30 ft), 30 meters optional (98 ft)
Environmental rating	IP 68 / NEMA 6P
Dimensions (mm, in)	H 35 x W 55 x D 70, 1.4" x 2.2" x 2.75"
Weight	17 oz, approx. 500 grams with 10m cable (30ft)
Minimum pulse width	100ms ± 10ms

Pulser

The evoQ₄ pulser is fully sealed, IP68 unit suitable for installation in flooded environments.

Pulse option label denotes the pulse configuration of the unit (see table below).

A4-wire outputs:
Red - Pulse channel 1
White - Pulse channel 2
Black - Alarm output*
Green - Common..



PULSE OUTPUT OPTIONS					
Wire color	Red	White	Black	Green	
Function	Channel 1	Channel 2	Alarm	Common / Ground	
Pulse option label	Pulse weight				Note
F	1 USG / 0.1 Cuft / 1 L	1 USG / 0.1 Cuft / 1 L	Alarm	Common / Ground	Net total (Fwd - Rev); Net total (Fwd - Rev)
K	10 USG / 1 Cuft / 10 L	10 USG / 1 Cuft / 10 L	Alarm	Common / Ground	Net total (Fwd - Rev); Net total (Fwd - Rev)
M	100 USG / 10 Cuft / 100 L	100 USG / 10 Cuft / 100 L	Alarm	Common / Ground	Net total (Fwd - Rev); Net total (Fwd - Rev)
P	1000 USG / 100 Cuft / 1000 L	1000 USG / 100 Cuft / 1000 L	Alarm	Common / Ground	Net total (Fwd - Rev); Net total (Fwd - Rev)
G	1 USG / 0.1 Cuft / 1 L	10 USG / 1 Cuft / 10 L	Alarm	Common / Ground	Net total (Fwd - Rev); Net total (Fwd - Rev)
D*	10 USG / 1 Cuft / 10 L	100 USG / 10 Cuft / 100 L	Alarm	Common / Ground	Net total (Fwd - Rev); Net total (Fwd - Rev)
L	10 USG / 1 Cuft / 10 L	1000 USG / 100 Cuft / 1000 L	Alarm	Common / Ground	Net total (Fwd - Rev); Net total (Fwd - Rev)
N	100 USG / 10 Cuft / 100 L	1000 USG / 100 Cuft / 1000 L	Alarm	Common / Ground	Net total (Fwd - Rev); Net total (Fwd - Rev)
H	1 USG / 0.1 Cuft / 1 L	100 USG / 10 Cuft / 100 L	Alarm	Common / Ground	Net total (Fwd - Rev); Net total (Fwd - Rev)
J	1 USG / 0.1 Cuft / 1 L	1000 USG / 100 Cuft / 1000 L	Alarm	Common / Ground	Net total (Fwd - Rev); Net total (Fwd - Rev)
E	1 USG / 0.1 Cuft / 1 L	Direction Flag	Alarm	Common / Ground	Ch1 Pulse Fwd AND Rev; Ch2 Direction flag
B	1 USG / 0.1 Cuft / 1 L	1 USG / 0.1 Cuft / 1 L	Alarm	Common / Ground	Ch1 Pulse Fwd; Ch2 Pulse Rev
S					Non Standard Configuration

1. Standard configuration if no pulse weight specified
Fwd - Rev: Forward pulses net of any reverse flow using compensation method internal to pulse module
Fwd AND Rev: Forward and Reverse pulses (direction flag outputs high state on forward flow)
Users should check compatibility with electrical requirements of data loggers, SCADA systems, PLC etc.

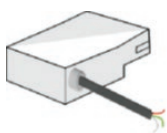
evoQ₄ Electromagnetic Meter
Elster Protocol Encoder Module

Operation

The evoQ₄ electronic water meter offers users flexibility in output choices. The modular design of the output interface allows utilities to easily retrofit meters to upgrade from direct reading or switch among different output modules. The Elster protocol encoder module is appropriate for interface where Honeywell mechanical water meters using Invision™ Encoder register connected the meter to the utility Automatic Meter Reading system or Automated Metering Infrastructure. Touch reading via inductive pads is supported as well. Upgrading from Touch reading to AMR does not require a module change.

The module operates via optical interface with the evoQ₄ register output. The meter register and the potted encoder module remain fully protected from water ingress, retaining the outstanding reliability inherent to the evoQ₄ product line. The electronic register information is decoded by the encoder and translated to the ASCII standard frame message. Endpoints and interrogation devices obtain the reading through normal transmission processes.

Optional connection variants include bare wire with field splice kits for indoor or submerged locations, Nicor Connector, or Itron In-Line Connector™.



Generic Wire Diagram:

- Red: Data
- White: V+ (power)
- Black: VO (ground)



SPECIFICATIONS	
Protocol	Elster K frame
Encoded digits	6 most significant
Encoder ID.	10 digit fixed
Power source.	Lithium battery (10 yr)
Environmental rating (with appropriate splice kit)	NEMA 6P / IP68
Cable lengths (bare wire)	30 feet, 90 feet
Optional connectors (25')	Itron In Line Connector™ Nicor Connector™
Compatibility	Honeywell EnergyAxis® MegaNet™ Enc MTU Itron™ 60W, 60W-R, 200W, 100W Datamatic™ Firefly, MOSAIC Others, contact AMI provider tech support
Materials module	ABS Resin 3 conductor AWG 22 cable
Six digit resolution	1000 US Gallons 100 Cubic Feet 1 Cubic Meter

INSTALLATION

Lift the lid, using a small screwdriver blade, carefully remove the pulser clip.

Remove the blank cover by lifting up...

...and then slide out.

Fit the Encoder unit in the opposite manner to the cover removal.

Replace the securing clip (lugs uppermost).

Warning: Take care not to dislodge the rubber gasket on the underside of the unit when fitting / removing.

evoQ4 Electromagnetic Meter
Sensus Encoder Module

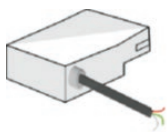
Operation

The Honeywell AMCO Water evoQ4 Sensus Protocol encoder module is designed for use with 3 wire radio endpoints. The 3 wire to 2 wire adapter module is necessary to allow the encoder to interface with 2 wire endpoints such as wall or pit pads for touch reading or AMR devices that utilize a 2 wire coupler integrated into the radio module.

The encoder reading is obtained through the normal means of interrogation of the reading point via radio endpoint.

The Sensus (also called V frame) protocol is transmitted from the encoder module and reported to the interrogating device.

Reading resolution is determined by the version of Sensus protocol encoder module used and the programming set in the handheld. Either 6 digit or 8 digit reads are transmitted.



Generic Wire Diagram:
Red: Data
White: V+ (power)
Black: VO (ground)

evoQ4 Size and Units	1.5"-4" USG	6"-12" USG	1.5"-4" CuFt	6"-12" CuFt	1.5"-4" M³	6"-12" M³
Resolution						
6 Digit Sensus encoder module	123456 x 1000 USG	123456 x 1000 USG	123456 x 100 CuFt	123456 x 100 CuFt	123456 x 1 M³	123456 x 1 M³
8 Digit Sensus encoder module	12345678 x 10 USG	12345678 x 10 USG	12345678 x 1 CuFt	12345678 x 1 CuFt	12345678 x 10 L	12345678 x 10 L



SPECIFICATIONS	
Protocol	Sensus V frame
Encoded digits	v_6 -6 most significant v_8 -8 most significant
Encoder ID.	10 digit fixed
Power source.	Lithium battery (10 yr)
Environmental rating (with appropriate splice kit)	NEMA 6P / IP68
Cable lengths (bare wire)	30 feet, 90 feet
Optional connectors (25')	Itron In Line Connector™ Nicor Connector™
Compatibility	Honeywell EnergyAxis® MegaNet™ Enc MTU Itron™ 60W, 60W-R, 200W, 100W Datamatic™ Firefly, MOSAIC Others, contact AMI provider tech support
Materials module	ABS Resin 3 conductor AWG 22 cable

Six digit resolution	1000 US Gallons 100 Cubic Feet 1 Cubic Meter
Eight digit resolution	10 US Gallons 1 Cubic Foot 1 Liter

INSTALLATION

Lift the lid, using a small screwdriver blade, carefully remove the pulser clip.

Remove the blank cover by lifting up...

...and then slide out.

Fit the Encoder unit in the opposite manner to the cover removal.

Replace the securing clip (lugs uppermost).

Warning: Take care not to dislodge the rubber gasket on the underside of the unit when fitting / removing.

evoQ₄ Electromagnetic Meter

MX 42 VP Module - Pulse and Encoder Module

Operation

The VP module for evoQ₄ combines a sensus protocol encoder channel and a high resolution pulse channel for use with both an AMR/I radio end point and typical industrial monitoring systems using the pulse input. Remote counters, PLC, and SCADA systems are typical.

Specify encoder resolution (6 digit or 8 digit).

Encoder connection types include three wire bare - for splicing to three wire radio endpoints, and Itron or Nicor connectors.

Bare wire cable function:

Red: Data

Green: V+ (power)

Black: VO (ground)

Pulse resolution is fixed but depends on the units of registration of the meter to which the module is attached.

USG: 1 pulse = 1 USG

CuFt: 1 pulse = 0.1 Cuft

M³: 1 pulse = 1 Liter

The pulse logic is fixed at Forward Net.

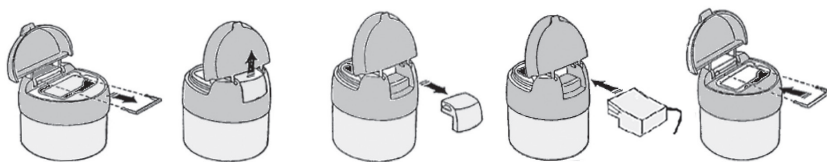
Reverse totalization will not cause an output, but reverse total is stored in a memory buffer. As forward flow resumes, The reverse total buffer will decrease until forward flow has equaled the buffer, in effect zeroing it out. The pulse train then resumes as normal with continued forward flow.

Pulse cable function:

Green: Pulse signal

Black: VO (ground).

INSTALLATION



Lift the lid, using a small screwdriver blade, carefully remove the pulser clip.

Remove the blank cover by lifting up...

...and then slide out.

Fit the Encoder unit in the opposite manner to the cover removal.

Replace the securing clip (lugs uppermost).

Warning: Take care not to dislodge the rubber gasket on the underside of the unit when fitting / removing.

Find Out More

WaterMeters@honeywell.com

www.elsteramcowater.com

Honeywell Smart Energy

10 SW 49th Avenue, Bldg. 100

Ocala, FL 34474

T +1 800 874 0890

F +1 352 368 1950

1100 Walker's Line, Suite 302

Burlington, Ontario L7N 2G3

T 866 703 7582

F 905 634 6705

www.HoneywellSmartEnergy.com

SEW-DS-NAEN-EVOQ4 Pulse Modules 05/2018

© 2018 Honeywell International Inc.



SPECIFICATIONS	
Power source	3 V Lithium battery (10 yr)
Environmental rating	NEMA 6P / IP68
Operating temp.	14 to 131°F (-10 to 55 °C)
Storage temp.	-4 to 140 °F (-20 to 60 °C)
Materials	ABS Resin

ENCODER	
Protocol	Sensus (specify 6 or 8 digit)
Encoder ID	10 digit fixed
Connection	25' cable with bare wire, Nicor or Itron connector

PULSE	
Pulse logic	Forward Net
Pulse weight	1 pulse = 1 USG / 0.1 Cuft / 1 L
Max. pulse frequency	100 hz
Min. pulse width	5 ms
Signal type	Open drain FET
Connection	Bare wire 25'
Max. load current	20mA
Max. load voltage	30 VDC

Honeywell

- 1) **Product Warranty:** Elster AMCO Water, LLC ("Supplier") warrants that the evoQ4 Electromagnetic Water Meter excluding ancillary devices ("Product") shall be free from defects in
 - a) material and workmanship,
 - b) accurate indications of digital figures on the display, and
 - c) measurements that conform to the parameters set forth in Exhibit A for the relevant meter,all evoQ4 subject to the warranty conditions and exclusions set forth herein for the duration of the applicable Warranty Period established below, beginning upon the manufacture date imprinted on the Product.
- 2) **Warranty Conditions:** These Warranties apply provided the Product is utilized for potable water from 32°F (0°C) to 86°F (30°C), in ambient temperatures from 14°F (-10°C) to 120°F (50°C), and in average ambient temperatures of 86°F (30°C) or less, and in accordance with Elster AMCO's Installation and Operation Manual ("Manual"). This warranty applies exclusively to the original utility as Buyer when Product is purchased from either Elster AMCO or an Elster AMCO-authorized distributor ("Business Partner").
- 3) **Warranty Period:**
 - a) Built-In Battery EvoQ4 - ten (10) years; and
 - b) Replaceable Battery EvoQ4 – fifteen (15) years (provided, to the extent applicable, only Supplier or Supplier's authorized representative have replaced a new replaceable battery pack).
- 4) **Battery Warranty:** Subject to the conditions and exclusions set forth herein, Supplier warrants that the Product battery shall be free from defects in continuous battery life as set forth below for the relevant Product type:
 - a) Built-In Battery EvoQ4 has a battery warranty period of ten (10) years from the manufacture date imprinted on each meter.
 - b) Replaceable Battery EvoQ4 has a warranty period as follows beginning upon the manufacture date imprinted on each meter: (i) 1.5 to 4 inch size, a period of ten (10) years; (ii) 6 inch size, a period of seven (7) years; and eight (8) to twelve (12) inch size, a period of five (5) years.
- 5) **Ancillary Devices:** The foregoing ten-year warranty does not apply to Ancillary Devices shipped with the Product. For the purposes of this Warranty, Ancillary Devices shall include but not be limited to encoder communication modules, replaceable batteries, spool pieces and remote totalizer displays. If installed and operated in accordance with the Manual, Elster AMCO warrants that the Ancillary Devices shall be free from defects in materials and workmanship for a period of 18 months from the manufacture date imprinted on each device, or from date of shipment for devices not serialized.
- 6) **Exclusions:** Supplier shall have no obligation hereunder with respect to any Product, Battery or Ancillary Devices which (i) have been improperly repaired or altered; (ii) have been subjected to misuse, negligence or accident; (iii) have been damaged due to forces of nature; or (iv) have been used, stored or installed in a manner contrary to Supplier's instructions. Further, Supplier has no responsibility under these Warranties for (a) consumable parts, such as protective coatings that are designed to diminish over time; (b) cosmetic damage, including but not limited to scratches, dents and broken plastic on ports; (c) any failure, non-conformity or defect of the Product or component thereof caused by any particles in the water which affect their function outside the normal or standards generally accepted in the industry, aggressive water or other environmental conditions (including submersion in contaminated ground water or foreign matter in the water or environment); (d) damage caused by use with another product; (e) damage caused by accident, abuse, vandalism, deliberate tampering, theft, mishandling, misapplication, misuse, fire, earthquake or other external cause; (f) improper installation and/or damage caused by operating the Product outside parameters set forth in Elster AMCO Water's Manual or other published guidelines; (g) damage caused by services (including but limited to upgrades, maintenance, repairs and expansions) performed by anyone who is not a representative of Elster AMCO Water or authorized by Elster AMCO Water to undertake such work; (h) a Product that has been modified to alter functionality or capability without the written permission of Elster AMCO

Water; (i) defects caused by normal wear and tear or otherwise due to the normal aging of the Product; (j) any serial number or security seals (in whole or in part) have been removed or defaced from the Product, (k) products and/or components provided by the Buyer; (l) in case of acts of God or other conditions or circumstances beyond the reasonable control of Elster AMCO Water; (m) a Product that has been immersed in water above 30°C; (n) a Product that has been immersed in water below 30°C to a depth in excess of 1.0 meter for a continuous period that exceeds 24 hours; or (o) if any equipment interrogates the Product, then the frequency of such interrogation is no more than once per hour.

- 7) **Products Remedy:** If a nonconformity to the foregoing warranty is discovered in the Products during the applicable Warranty Period under normal and proper use, and provided the Products have been properly stored, installed, operated and maintained (Buyer to provide proper records), Buyer shall promptly notify Supplier and return the Product via Supplier's Return Material Authorization process. Upon Supplier's confirmation of such failure, Supplier shall, at its option, (i) within the first ten years of the applicable Warranty Period, either repair, replace, or refund the nonconforming portion of the Products, and (ii) with respect to Products having a Warranty Period exceeding ten (10) years, provide a discounted purchase price of a replacement product based upon the then current list price as follows:
 - At least 10 years but less than 11 years – 40% discount
 - At least 11 years but less than 12 years – 30% discount
 - At least 12 years but less than 13 years – 20% discount
 - At least 13 years but less than 14 years – 15% discount
 - At least 14 years but less than 15 years – 10% discount.
- 8) **Remedy Exclusions:** With respect to all warranties set forth herein, in no event, shall Supplier be responsible for gaining access to the Products, disassembly, reassembly or transportation of the Products or parts from or to the place of installation, all of which shall be at Buyer's risk and expense.
- 9) **Additional Limitations:** Any description of product, whether in writing or made orally by Supplier or its agents, or set forth in specifications, samples, literature, models, bulletins, drawings, diagrams, engineering sheets or similar materials used in connection with any Buyer's order are for the sole purpose of identifying product and shall not be construed as an express or implied guarantee. Any suggestions by Supplier or its agents regarding use, application or suitability of product shall not be construed as an express or implied guarantee unless expressly set forth as a warranty in writing issued by Supplier.
- 10) THE REMEDIES SET FORTH HEREIN ARE BUYER'S EXCLUSIVE REMEDIES AGAINST SUPPLIER, WHETHER IN CONTRACT OR TORT OR UNDER ANY OTHER LEGAL OR CONTRACTUAL OR EXTRA-CONTRACTUAL BASIS OR THEORY, AND WHETHER ARISING OUT OF WARRANTIES, GUARANTEES, REPRESENTATIONS, INSTRUCTIONS, INSTALLATIONS OR DEFECTS FROM ANY CAUSE.
- 11) THE EXPRESS WARRANTIES SET FORTH HEREIN ARE EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, REPRESENTATIONS, GUARANTEES AND THE LIKE, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSE, AND NON-INFRINGEMENT, AND CONSTITUTE THE ONLY WARRANTIES OF SUPPLIER WITH RESPECT TO THE PRODUCTS.
- 12) IN NO EVENT SHALL SUPPLIER AND/OR ITS BUSINESS PARTNERS BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, LOSS OF PROFITS OR REVENUE, LOSS OF USE, COST OF CAPITAL, COST OF SUBSTITUTE EQUIPMENT, FACILITIES OR SERVICES, DOWNTIME COSTS, DELAYS AND CLAIMS OF CUSTOMERS OF BUYER OR OTHER THIRD PARTIES.

EXHIBIT A

evoQ4 Accuracy Parameters

evoQ4 Standard Water Meter

Performance	Inches	1.5	2	3	4	6	8	10	12
	mm	40	50	80	100	150	200	250	300
> 95% Accuracy	GPM	0.25	0.25	0.6	1.7	4	8	32	32
	m³/h	0.06	0.06	0.14	0.4	0.9	1.8	7.3	7.3
98.5%-101.5% Accuracy	GPM	1-130	1-220	2-550	4-880	8-1400	16-3500	50-5500	65-5500
	m³/h	0.23-30	0.23-50	0.5-125	0.9-200	1.8-318	3.6-795	11.4-1249	14.8-1249
Maximum flow	GPM	130	220	550	880	1400	3500	5500	5500
	m³/h	30	50	125	200	318	795	1294	1294
Max. Operating Pressure	psi	175	230	230	230	230	230	150	150
	Bar	12	16	16	16	16	16	10	10

LOW Flow evoQ4 Water Meter

Performance	1 1/2"	(DN 40mm)	2"	(DN 50mm)
> 95% Accuracy GPM (m³/h)	0.25	(0.057)	0.25	(0.057)
98.5%-101.5% Accuracy GPM (m³/h)	1-130	(0.227-30)	1-170	(0.227-39)
Maximum flow* GPM (m³/h)	130	(30)	170	(39)
Max. Operating Pressure psi (bar)	175	(12)	175	(12)

*Flow in excess of maximum does not affect performance at flows within limits

AL evoQ4 Water Meter

Performance	1 1/2"	(DN 40mm)	2"	(DN 50mm)
> 95% Accuracy GPM (m³/h)	0.26	(0.11)	0.26	(0.11)
98.5%-101.5% Accuracy GPM (m³/h)	2	(0.5)	2	(0.5)
Maximum flow GPM (m³/h)	220	(50)	220	(50)
Max. Operating Pressure psi (kPa)	150	(10)	150	(10)

EXHIBIT A

evoQ4 Accuracy Parameters

evoQ4 Standard Fire Service Water Meter

Performance	Inches	1.5	2	3	4	6	8
	Mm	40	50	80	100	150	200
> 95% Accuracy	GPM	0.25	0.25	0.6	1.7	4	8
	m³/h	0.057	0.057	0.14	0.4	0.9	1.8
*98.5% - 101.5% Accuracy	GPM	1-130	1-170	2-550	4-880	8-1400	16-3500
	m³/h	0.227-30	0.227-39	0.5-125	0.9-200	1.8-318	3.6-795
**Maximum flow	GPM	130	170	550	880	1400	3500
	m³/h	30	39	125	200	318	795
***Max. operating pressure	Psi	175	175	230	230	230	230
	Bar	12	12	16	16	16	16

UL listing covers normal flow ranges (98.5 - 101.5% accuracy)

**Typical maximum registered flow. evoQ4 is unaffected by deluge flows delivered for fire services

***UL listing applies to operating pressure of 175ps

evoQ4 Replaceable Battery Water Meter

Performance	Inches	1.5	2	3	4	6	8	10	12
	mm	40	50	80	100	150	200	250	300
> 95% Accuracy	GPM	0.25	0.25	0.6	1.7	4	8	32	32
	m³/h	0.06	0.06	0.14	0.4	0.9	1.8	7.3	7.3
98.5%-101.5% Accuracy	GPM	1-130	1-220	2-550	4-880	8-1400	16-3500	50-5500	65-5500
	m³/h	0.23-30	0.23-50	0.5-125	0.9-200	1.8-318	3.6-795	11.4-1249	14.8-1249
Maximum flow	GPM	130	220	550	880	1400	3500	5500	5500
	m³/h	30	50	125	200	318	795	1294	1294
Max. Operating Pressure	psi	175	230	230	230	230	230	150	150
	Bar	12	16	16	16	16	16	10	10

EXHIBIT A

evoQ4 Accuracy Parameters

evoQ4 Fire Service Replaceable Battery Water Meter

Performance	Inches	1.5	2	3	4	6	8
	mm	40	50	80	100	150	200
> 95% Accuracy	GPM	0.25	0.25	0.25	1.7	4	8
	m³/h	0.057	0.057	0.057	0.4	0.9	1.8
*98.5%-101.5% Accuracy	GPM	1-130	1-170	2-550	4-880	8-1400	16-3500
	m³/h	0.227-30	0.227-39	0.5-125	0.9-200	1.8-318	3.6-795
**Maximum flow	GPM	130	170	550	880	1400	3500
	m³/h	30	39	125	200	318	795
***Max. Operating Pressure	psi	175	175	230	230	230	230
	Bar	12	12	16	16	16	16

*UL listing covers normal flow ranges (98.5 - 101.5% accuracy)

**Typical maximum registered flow. evoQ4 is unaffected by deluge flows delivered for fire services

***UL listing applies to operating pressure of 175ps



Memorandum

Title: Presentation and Discussion on Improvement Options for the Ruxton Corridor -
Update from February 11, 2025 Work Session

From: Glenn Ellis from JR Engineering

To: Mayor and City Council

CC: City Administrator Denise Howell

Allocated Time: 45 Minutes

April 8, 2025

Purpose:

To answer the questions posed at the February 11, 2025 Work Session and provide an update on estimated costs.

Background:

On February 11, 2025 staff presented an update on the Ruxton Corridor options with limited funding. The council had a couple of questions for staff to follow up. This evening, Glenn Ellis from JR Engineering will provide an update, answer the questions, and give the cost estimates.

Pros and Cons:

Pros and Cons are provided in the presentation.

Fiscal Impact:

Over \$5,300,000

Workload Impact:

Significant

Recommended Action:

Seeking direction

Ruxton Corridor Improvement Options Discussion



PROJECT UPDATE (FOLLOW-UP)
APRIL 8, 2025

Purpose:

To follow up on the previous city council meeting discussion on the status of the Ruxton corridor, and provide additional Information on the options, as well as provide additional options for consideration



Topics of Discussion for Ruxton Corridor:

Answer questions from prior council meeting

Overview of current funding and design

Review Options

Direction From City Council on Corridor and Mobility Improvements Options

Council Meeting

February 11, 2025

Questions



1. What is the cost for the secondary connections and easements?
2. What does the telecommunication company's franchise agreement say about undergrounding costs?

Council Meeting

February 11, 2025

Questions



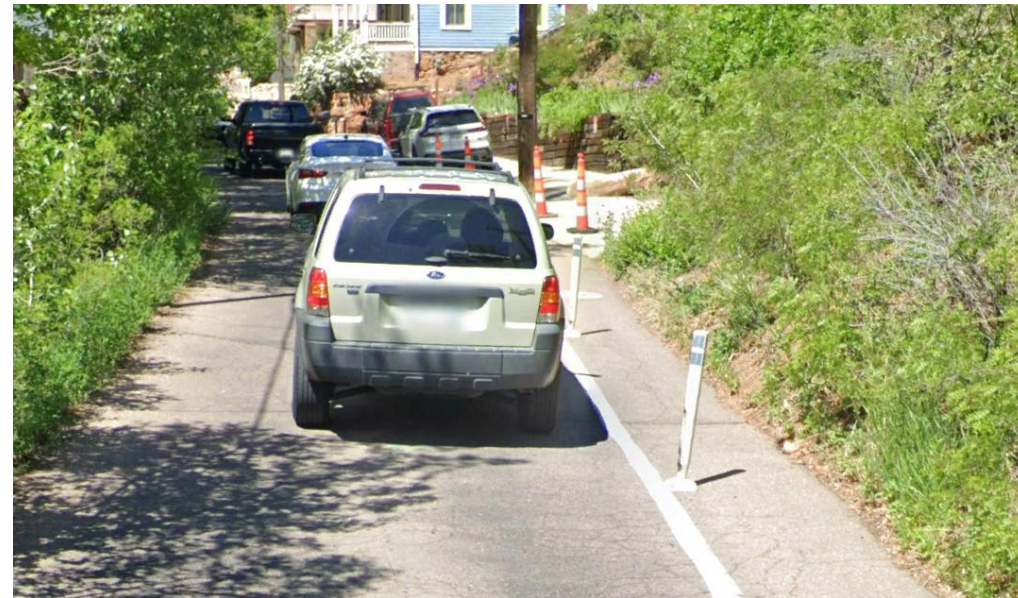
What does the telecommunication company's franchise agreement say about undergrounding costs?

3.2.7. Undergrounding and Beautification Projects. In the event all users of the Public Way relocate aerial facilities underground as part of an undergrounding or neighborhood beautification project, Grantee shall participate in the planning for relocation of its aerial facilities contemporaneously with other utilities. Grantee's relocation costs shall be included in any computation of necessary project funding by the municipality or private parties. Grantee shall be entitled to reimbursement of its relocation costs from public or private funds raised for the project and made available to other users of the Public Way.

Additional Question(s)



Can sidewalk be installed between Pilot Knob and the Incline entrance?



Additional Question(s)



Can sidewalk be installed between Pilot Knob and the Incline entrance?

Specifications

Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet, exclusive of shoulders, except for approved security gates and an unobstructed vertical clearance of not less than 13 feet 6 inches.

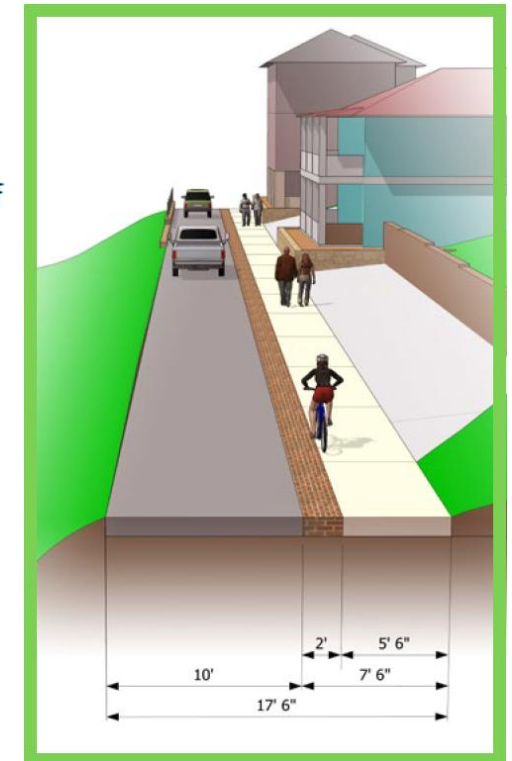
460' of 7' sidewalk, curb, and gutter.

600' of 5.5' sidewalk, and 2' buffer.

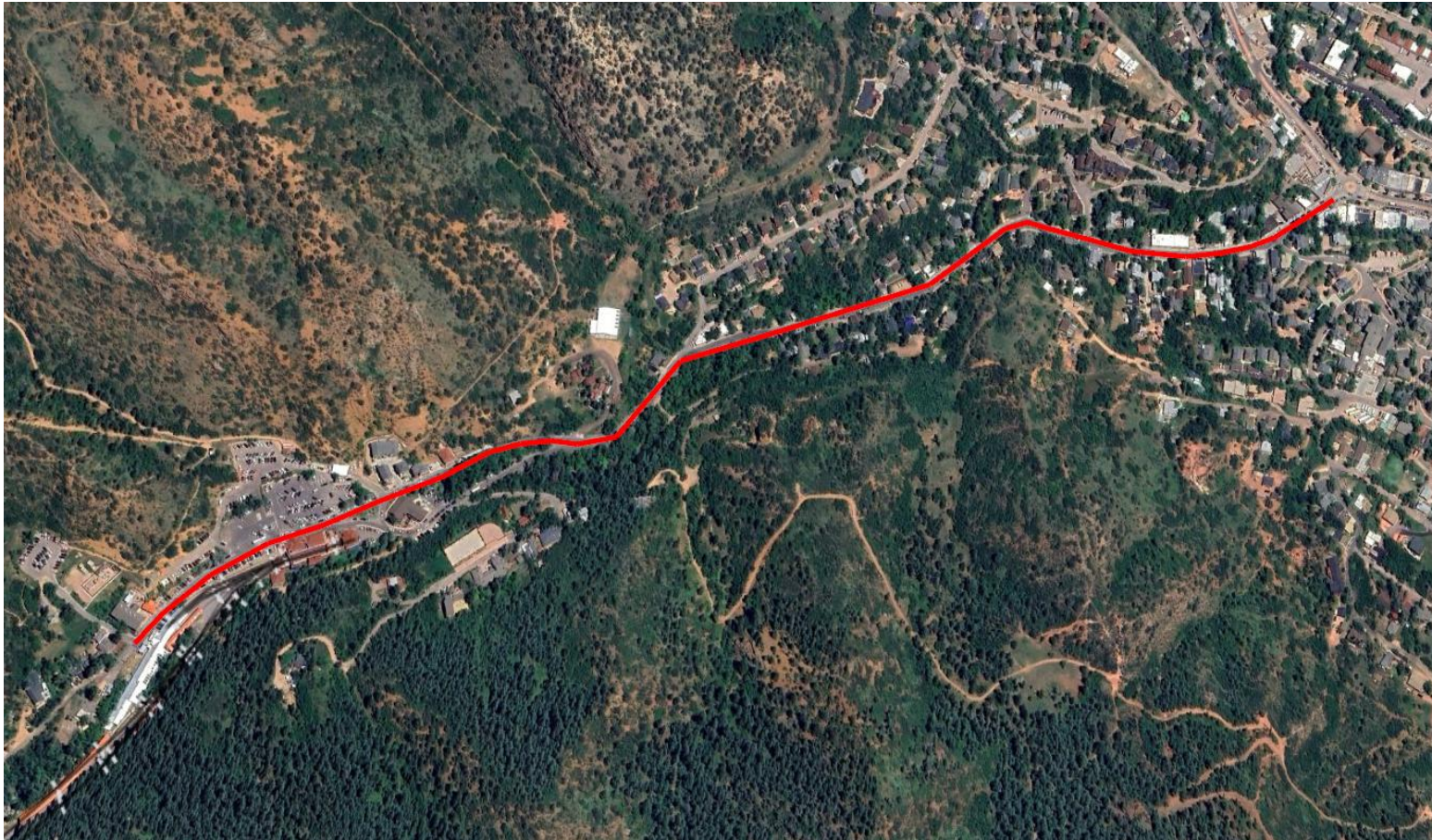
Asphalt removal, and new delineators.

Estimate ~\$195,000 (without resurfacing)

Estimate ~\$275,000 (with resurfacing)



CDOT Funding Limits (Original)



Current CDOT/City of Manitou Springs (COMS) Funding



	Funding Agency Balance	COMS City Funds Balance	Total Grant Balance
Grant Amount	\$ 4,412,675.54	\$ 917,286.00	\$ 5,329,961.54
Bal Remaining	\$4,021,021.91	\$ 835,870.87	\$ 4,856,892.78

- **Current Design (50%)**
 - **Hydro St to New York Ave**
 - **Underground Electrical/New Street Lighting**
 - **New Asphalt Paving/Curb/Gutter/Sidewalk**
 - **New Water/Sanitary/Storm**
 - **\$8,250,000**



Corridor Options

Option Limits - A and B Hydro St to New York Ave



Option A

Hydro St to New York Ave



- Underground electrical/telecom
- Asphalt rehabilitation (mill & overlay)
- Structurally line sanitary sewer
- Pedestrian walkability enhancements
- New street lights
- Does not include water or storm
- **\$4,920,000**

Option A

Hydro St to New York Ave



PROS	CONS
Underground conversion	Benefits the COG/Incline area
Upgraded sanitary sewer	Remainder of corridor left as-is
New street lights	No new water or storm
New pavement surface	Revise existing design req'd
Fits within budget	

Option B

Hydro St to New York Ave



- Leave electrical overhead
- Asphalt rehabilitation (mill & overlay)
- New curb/gutter/sidewalk
- Structurally line sanitary sewer
- New sanitary sewer manholes
- New storm sewer
- New water valves and fire hydrants
- **\$2,980,000**

Option B

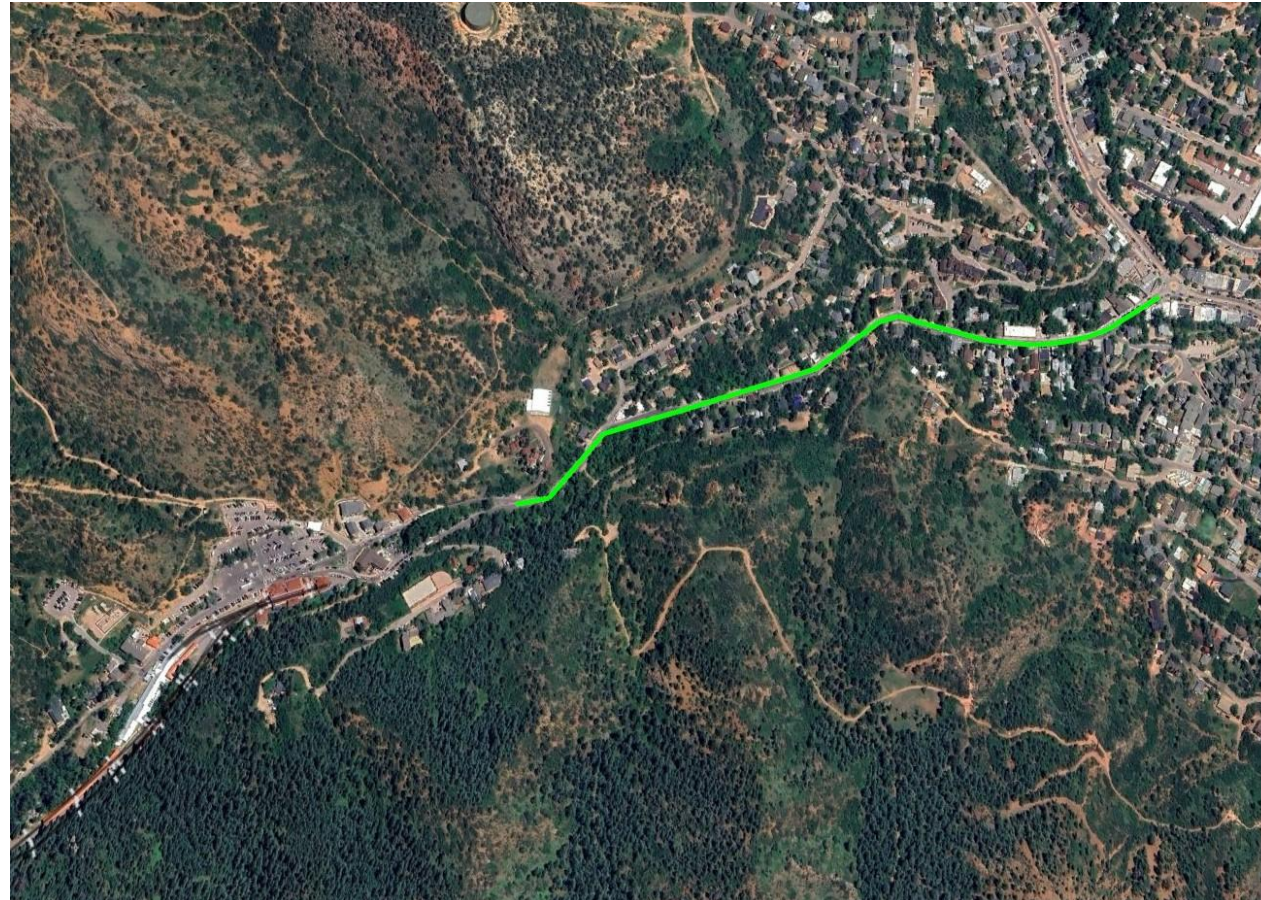
Hydro St to New York Ave



PROS	CONS
Upgraded sanitary sewer	Benefits the COG/Incline area
New water valves/fire hydrants	Remainder of corridor left as-is
New pavement surface	Overhead utilities remain
New curb/gutter/sidewalk	Revise existing design req'd
New storm sewer	No new water main
Fits within remaining budget	

Option Limits - C and D

New York Ave to Manitou Ave



Option C

New York Ave to Manitou Ave



- Leave electrical overhead
- Asphalt rehabilitation (mill & overlay)
- New curb/gutter/sidewalk
- Structurally line sanitary sewer
- New sanitary sewer manholes
- New storm sewer inlets
- New water valves and fire hydrants
- **\$4,415,000**

Option C

New York Ave to Manitou Ave



PROS	CONS
Upgraded sanitary sewer	Overhead utilities remain
New water valves/fire hydrants	Add'l funding required
New pavement surface	Design required
New curb/gutter/sidewalk	No new water or storm
Replace storm sewer inlets	
New sanitary sewer manholes	
Benefits most of corridor	

Option D

New York Ave to Manitou Ave



- ~\$4.5 Million underground electrical
- ~\$1.0 Million underground telecommunications
- ~\$2.5 Million secondary connections and easements
- New street lights
- CDOT funds do not qualify
- No water/sanitary/storm improvements
- No sidewalk improvements
- **\$14.8 Million**

Option D

New York Ave to Manitou Ave



PROS	CONS
Underground conversion	No other improvements
New street lights	CDOT funding won't cover
Benefits most of the corridor	

Option Limits – E Hydro St to Manitou Ave



Option E

Hydro St to Manitou Ave



- Leave electrical overhead
- Asphalt rehabilitation (mill & overlay)
- New curb/gutter/sidewalk
- Structurally line sanitary sewer
- New sanitary sewer manholes
- New water valves and fire hydrants
- New storm sewer system
- **\$7,875,000**

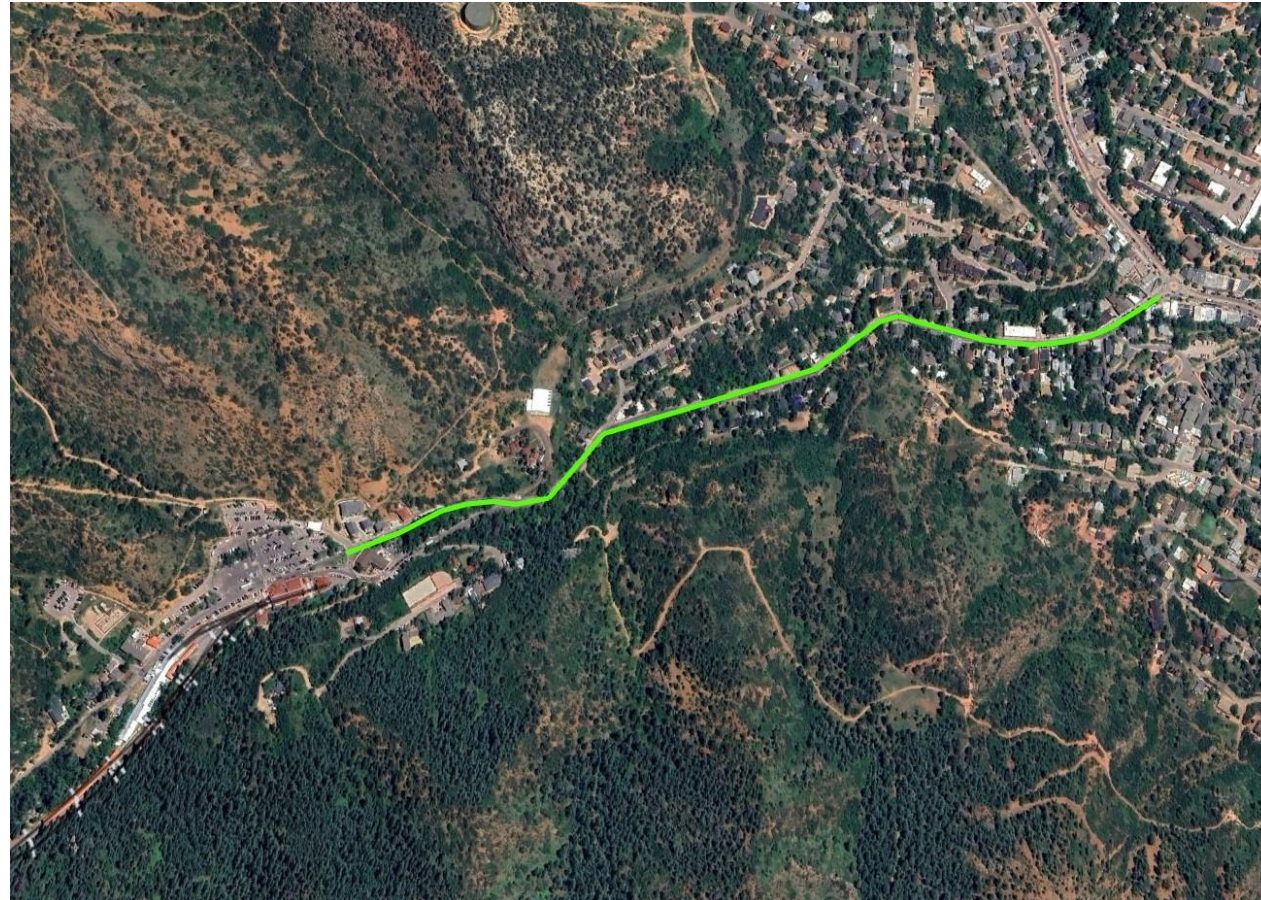
Option E

Hydro St to Manitou Ave



PROS	CONS
Upgraded sanitary sewer	Overhead utilities remain
New water valves/fire hydrants	Add'l funding required
New pavement surface	Add'l design required
New curb/gutter/sidewalk	No new water main
New storm sewer system	
New sanitary sewer manholes	
Benefits the entire corridor	

Option Limits – F Incline to Manitou Ave



Option F

Incline to Manitou Ave



- Leave electrical overhead
- Asphalt rehabilitation (mill & overlay)
- New curb/gutter/sidewalk
- Structurally line sanitary sewer
- New sanitary sewer manholes
- New water valves and fire hydrants
- New storm sewer system
- **\$5,870,000**

Option F

Incline to Manitou Ave



PROS	CONS
Upgraded sanitary sewer	Overhead utilities remain
New water valves/fire hydrants	Add'l funding required
New pavement surface	Design hasn't started
New curb/gutter/sidewalk	No new water main
New storm sewer system	
New sanitary sewer manholes	
Benefits most of the corridor	

Options Matrix

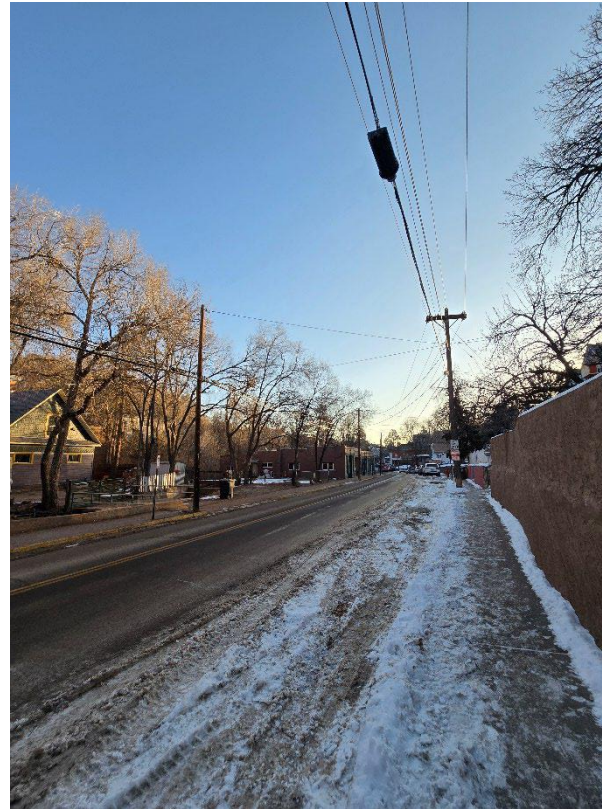


Option	Limits	Cost	Underground	New Valves / Fire Hydrants	Sanitary Sewer Lining	New Sanitary Sewer Manholes	New Storm Sewer	Storm Sewer Inlets	Asphalt Resurface
A	Hydro – New York	\$4,920,000	X						X
B	Hydro – New York	\$2,980,000		X	X	X	X	X	X
C	New York – Manitou	\$4,415,000		X	X	X		X	X
D	New York – Manitou	\$14,750,000	X						
E	Hydro – Manitou	\$7,875,000		X	X	X	X	X	X
F	Incline - Manitou	\$5,870,000		X	X	X	X	X	X

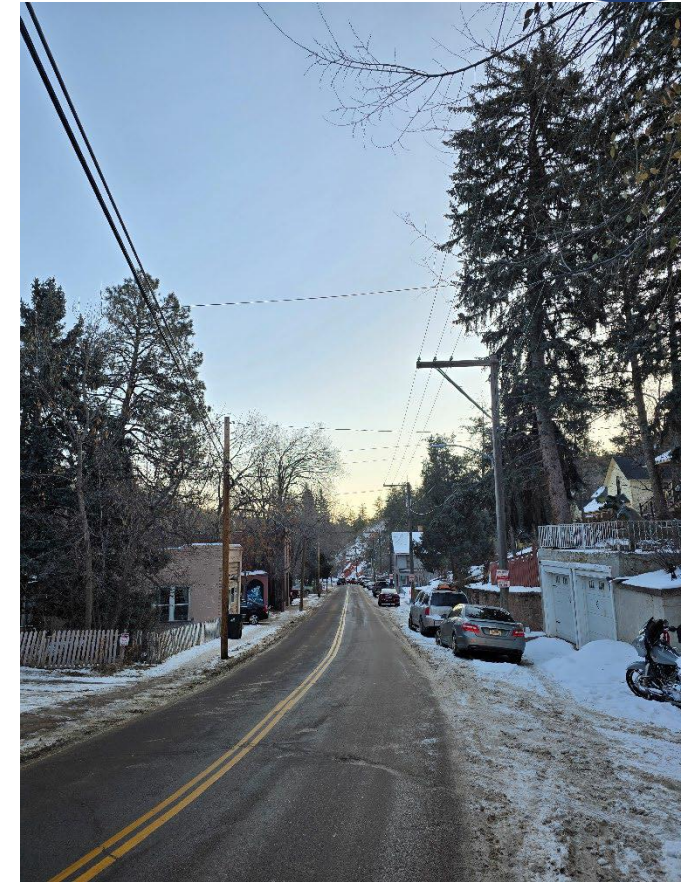
Lower Ruxton Corridor Overhead Challenges



Lower Ruxton Corridor Overhead Challenges



Lower Ruxton Corridor Overhead Challenges



Recommendation:



- **Option F – Incline to Manitou Ave**
- **Largest return on investment**
- **Benefits largest community area**
- **Look for ways to reduce costs during design**
- **Seek additional funding during design**
- **Look for ways to move poles to best fit new sidewalk**
- **\$5,870,000**



Thank You!

Option A
Hydro Street to New York Avenue (Slide 12)
Underground Electric

CONTRACT ITEM	UNIT	TOTALS	ITEM COST	TOTAL COST
DEMOLITION, EROSION CONTROL, AND ROADWAY				
Mill & Overlay Asphalt	SY	8,700	\$ 30.00	\$ 261,000.00
Potholing	HOURL	40	\$ 350.00	\$ 14,000.00
Staging Area- Fencing Etc	EACH	1	\$ 10,000.00	\$ 10,000.00
Outlet Protection	EACH	3	\$ 3,000.00	\$ 9,000.00
Silt Fence	LF	2,400	\$ 3.00	\$ 7,200.00
Storm Drain Inlet Protection (Type III)	EACH	5	\$ 3,000.00	\$ 15,000.00
Vehicle Tracking Pad	LS	1	\$ 5,000.00	\$ 5,000.00
Erosion Control Management	LS	1	\$ 25,000.00	\$ 25,000.00
Seeding (Native)	ACRE	0.5	\$ 5,000.00	\$ 2,500.00
Structural Sewer Lining	LF	1,973	\$ 60.00	\$ 118,380.00
2" Conduit and Wire (Street Lighting)	LF	2,300	\$ 40.00	\$ 92,000.00
Street Lights & Foundations	EACH	6	\$ 10,000.00	\$ 60,000.00
Delineator (Flexible) (Type I)	EACH	73	\$ 125.00	\$ 9,125.00
Sign Panel (Class I)	SF	85	\$ 25.00	\$ 2,125.00
Steel Sign Post (1.75x1.75 Inch Tubing)	LF	140	\$ 25.00	\$ 3,500.00
Thermoplastic Pavement Marking	SF	1,050	\$ 24.00	\$ 25,200.00
Modified Epoxy Pavement Marking	GAL	100	\$ 300.00	\$ 30,000.00
DEMO, EROSION CONTROL, ROADWAY SUBTOTAL				\$ 689,030.00
MISCELLANEOUS/OPTIONS				
Mobilization	LS	1	\$ 103,360.00	\$ 103,360.00
Traffic Control	LS	1	\$ 172,300.00	\$ 172,300.00
F/A Minor Contract Revisions	F/A	1	\$ 172,300.00	\$ 172,300.00
Design Modifications - To Be Negotiated	LS	1	\$ 150,000.00	\$ 150,000.00
Utility Easements	EACH	6	\$ 3,000.00	\$ 18,000.00
F/A Furnish & Install Secondary Electrical Service	EACH	6	\$ 25,000.00	\$ 150,000.00
Underground Electric- CSU 50%	LS	0.5	\$ 3,750,000.00	\$ 1,875,000.00
Underground Telecomm	LS	1	\$ 500,000.00	\$ 500,000.00
F/A Erosion Control	F/A	1	\$ 50,000.00	\$ 50,000.00
F/A Environmental Health & Safety Management	F/A	1	\$ 10,000.00	\$ 10,000.00
MISCELLANEOUS SUBTOTAL				\$ 3,200,960.00

MISCELLANEOUS SUBTOTAL	\$ 3,200,960.00
COSTS SUBTOTAL	\$ 689,030.00
15% CONTINGENCY	\$ 583,498.50
TOTAL COSTS W CONTINGENCY	\$ 4,473,488.50
Construction Management (10%)	\$ 447,348.85
TOTAL COSTS W/ CM	\$ 4,920,837.35

Option B
Hydro Street to New York Avenue (Slide 14)
Leave Electric Overhead and Improve Individual Infrastructure Items

CONTRACT ITEM	UNIT	TOTALS	ITEM COST	TOTAL COST
DEMOLITION, EROSION CONTROL, AND ROADWAY				
Mill & Overlay Asphalt	SY	8,700	\$ 30.00	\$ 261,000.00
Potholing	HOURL	100	\$ 350.00	\$ 35,000.00
Staging Area- Fencing Etc	EACH	1	\$ 10,000.00	\$ 10,000.00
Outlet Protection	EACH	3	\$ 3,000.00	\$ 9,000.00
Silt Fence	LF	2,400	\$ 3.00	\$ 7,200.00
Storm Drain Inlet Protection (Type III)	EACH	13	\$ 3,000.00	\$ 39,000.00
Vehicle Tracking Pad	LS	1	\$ 5,000.00	\$ 5,000.00
Erosion Control Management	LS	1	\$ 25,000.00	\$ 25,000.00
Seeding (Native)	ACRE	0.5	\$ 5,000.00	\$ 2,500.00
Structural Sewer Lining	LF	1,973	\$ 60.00	\$ 118,380.00
Concrete washout	EACH	1	\$ 5,000.00	\$ 5,000.00
Concrete Pavement 6"	SY	410	\$ 115.00	\$ 47,150.00
Concrete Sidewalk	SY	755	\$ 60.00	\$ 45,300.00
Concrete Curb Ramp	SY	28	\$ 200.00	\$ 5,600.00
Curb and Gutter Type 2 (I-B)	LF	1,580	\$ 30.00	\$ 47,400.00
Curb and Gutter Type 2 (B)	LF	140	\$ 30.00	\$ 4,200.00
Manhole Replacements	EACH	3	\$ 20,000.00	\$ 60,000.00
Manhole- New	EACH	8	\$ 20,000.00	\$ 160,000.00
Stormwater Inlet	EACH	7	\$ 5,000.00	\$ 35,000.00
Reinforced Concrete Pipe 15"	LF	160	\$ 150.00	\$ 24,000.00
Reinforced Concrete Pipe 18"	LF	70	\$ 200.00	\$ 14,000.00
Reinforced Concrete Pipe 24"	LF	10	\$ 250.00	\$ 2,500.00
Reinforced Concrete Pipe 23" x 14"	LF	50	\$ 275.00	\$ 13,750.00
Hydronamic Seperator	EACH	2	\$ 100,000.00	\$ 200,000.00
Water Valve	EACH	5	\$ 5,000.00	\$ 25,000.00
Fire Hydrant Replacement	EACH	4	\$ 7,500.00	\$ 30,000.00
2" Conduit and Wire (Street Lighting)	LF	0	\$ 40.00	\$ -
Street Lights & Foundations	EACH	0	\$ 10,000.00	\$ -
Delineator (Flexible) (Type I)	EACH	73	\$ 125.00	\$ 9,125.00
Sign Panel (Class I)	SF	85	\$ 25.00	\$ 2,125.00
Steel Sign Post (1.75x1.75 Inch Tubing)	LF	140	\$ 25.00	\$ 3,500.00
Thermoplastic Pavement Marking	SF	1,050	\$ 24.00	\$ 25,200.00
Modified Epoxy Pavement Marking	GAL	100	\$ 300.00	\$ 30,000.00

DEMO, EROSION CONTROL, ROADWAY SUBTOTAL \$ 1,300,930.00

MISCELLANEOUS/OPTIONS				
Mobilization	LS	1	\$ 195,200.00	\$ 195,200.00
Traffic Control	LS	1	\$ 325,300.00	\$ 325,300.00
F/A Minor Contract Revisions	F/A	1	\$ 325,300.00	\$ 325,300.00
Design Modifications - To Be Negotiated	LS	1	\$ 150,000.00	\$ 150,000.00
F/A Erosion Control	F/A	1	\$ 50,000.00	\$ 50,000.00
F/A Environmental Health & Safety Management	F/A	1	\$ 10,000.00	\$ 10,000.00

MISCELLANEOUS SUBTOTAL \$ 1,055,800.00

MISCELLANEOUS SUBTOTAL	\$ 1,055,800.00
COSTS SUBTOTAL	\$ 1,300,930.00
15% CONTINGENCY	\$ 353,509.50
TOTAL COSTS W CONTINGENCY	\$ 2,710,239.50
Construction Management (10%)	\$ 271,023.95
TOTAL COSTS W/ CM	\$ 2,981,263.45

Option C
New York Avenue to Manitou Avenue (Slide 17)
Leave Electric Overhead and Improve Individual Infrastructure Items

CONTRACT ITEM	UNIT	TOTALS	ITEM COST	TOTAL COST
DEMOLITION, EROSION CONTROL, AND ROADWAY				
Mill & Overlay Asphalt	SY	9,060	\$ 30.00	\$ 271,800.00
Potholing	HOURL	100	\$ 350.00	\$ 35,000.00
Staging Area- Fencing Etc	EACH	1	\$ 10,000.00	\$ 10,000.00
Outlet Protection	EACH	6	\$ 3,000.00	\$ 18,000.00
Silt Fence	LF	4,000	\$ 3.00	\$ 12,000.00
Storm Drain Inlet Protection (Type III)	EACH	14	\$ 3,000.00	\$ 42,000.00
Vehicle Tracking Pad	LS	1	\$ 5,000.00	\$ 5,000.00
Erosion Control Management	LS	1	\$ 25,000.00	\$ 25,000.00
Seeding (Native)	ACRE	1.0	\$ 5,000.00	\$ 5,000.00
Structural Sewer Lining	LF	3,654	\$ 60.00	\$ 219,240.00
Concrete washout	EACH	1	\$ 5,000.00	\$ 5,000.00
Concrete Sidewalk	SY	2,745	\$ 60.00	\$ 164,700.00
Concrete Curb Ramp	SY	84	\$ 200.00	\$ 16,800.00
Curb and Gutter Type 2	LF	5,425	\$ 30.00	\$ 162,750.00
Manhole Replacements	EACH	14	\$ 20,000.00	\$ 280,000.00
Manhole- New	EACH	1	\$ 20,000.00	\$ 20,000.00
Stormwater Inlet	EACH	5	\$ 5,000.00	\$ 25,000.00
Water Valve	EACH	20	\$ 5,000.00	\$ 100,000.00
Fire Hydrant Replacement	EACH	4	\$ 7,500.00	\$ 30,000.00
2" Conduit and Wire (Street Lighting)	LF	0	\$ 40.00	\$ -
Street Lights & Foundations	EACH	0	\$ 10,000.00	\$ -
Sign Panel (Class I)	SF	170	\$ 25.00	\$ 4,250.00
Steel Sign Post (1.75x1.75 Inch Tubing)	LF	280	\$ 25.00	\$ 7,000.00
Thermoplastic Pavement Marking	SF	350	\$ 24.00	\$ 8,400.00
Modified Epoxy Pavement Marking	GAL	200	\$ 300.00	\$ 60,000.00
DEMO, EROSION CONTROL, ROADWAY SUBTOTAL				\$ 1,526,940.00
MISCELLANEOUS				
Mobilization	LS	1	\$ 229,100.00	\$ 229,100.00
Traffic Control	LS	1	\$ 381,800.00	\$ 381,800.00
F/A Minor Contract Revisions	F/A	1	\$ 381,800.00	\$ 381,800.00
Design with ROW and Easement Documentation	LS	1	\$ 585,000.00	\$ 585,000.00
F/A Erosion Control	F/A	1	\$ 85,000.00	\$ 85,000.00
F/A Environmental Health & Safety Management	F/A	1	\$ 20,000.00	\$ 20,000.00
MISCELLANEOUS SUBTOTAL				\$ 1,682,700.00

MISCELLANEOUS SUBTOTAL	\$ 1,682,700.00
COSTS SUBTOTAL	\$ 1,526,940.00
25% CONTINGENCY	\$ 802,410.00
TOTAL COSTS W CONTINGENCY	\$ 4,012,050.00
Construction Management (10%)	\$ 401,205.00
TOTAL COSTS W/ CM	\$ 4,413,255.00

Option D
New York Avenue to Manitou Avenue (Slide 19)
Undergrounding Electric Only

CONTRACT ITEM	UNIT	TOTALS	ITEM COST	TOTAL COST
DEMOLITION, EROSION CONTROL, AND ROADWAY				
Mill & Overlay Asphalt	SY		\$ 30.00	\$ -
CSU Asphalt Replacement Due to Undergrounding	SY		\$ (8.00)	\$ -
Potholing	HOUR	100	\$ 350.00	\$ 35,000.00
Staging Area- Fencing Etc	EACH	1	\$ 10,000.00	\$ 10,000.00
Outlet Protection	EACH		\$ 3,000.00	\$ -
Erosion Log Type 1 (12 Inch)	LF		\$ 15.00	\$ -
Silt Fence	LF		\$ 3.00	\$ -
Storm Drain Inlet Protection (Type III)	EACH		\$ 3,000.00	\$ -
Vehicle Tracking Pad	LS		\$ 5,000.00	\$ -
Erosion Control Management	LS		\$ 25,000.00	\$ -
Seeding (Native)	ACRE		\$ 5,000.00	\$ -
Structural Sewer Lining	LF		\$ 60.00	\$ -
2" Conduit and Wire (Street Lighting)	LF	5,500	\$ 40.00	\$ 220,000.00
Street Lights & Foundations	EACH	28	\$ 10,000.00	\$ 280,000.00
Delineator (Flexible) (Type I)	EACH		\$ 125.00	\$ -
Sign Panel (Class I)	SF		\$ 25.00	\$ -
Steel Sign Post (1.75x1.75 Inch Tubing)	LF		\$ 25.00	\$ -
Wheel Stop (Concrete)	EACH		\$ 300.00	\$ -
Thermoplastic Pavement Marking	SF		\$ 24.00	\$ -
Modified Epoxy Pavement Marking	GAL		\$ 300.00	\$ -

DEMO, EROSION CONTROL, ROADWAY SUBTOTAL \$ 545,000.00

MISCELLANEOUS/OPTIONS				
Mobilization	LS	1	\$ 81,800.00	\$ 81,800.00
Traffic Control	LS	1	\$ 136,300.00	\$ 136,300.00
F/A Minor Contract Revisions	F/A	1	\$ 136,300.00	\$ 136,300.00
Design Modifications - To Be Negotiated	LS	1	\$ -	\$ -
Utility Easements	EACH	100	\$ 3,000.00	\$ 300,000.00
F/A Furnish & Install Secondary Electrical Service	EACH	100	\$ 25,000.00	\$ 2,500,000.00
Underground Electric- CSU 50%	LS	0.5	\$ 9,000,000.00	\$ 4,500,000.00
Underground Telecomm	LS	1.0	\$ 2,500,000.00	\$ 2,500,000.00
F/A Erosion Control	F/A	1	\$ 30,000.00	\$ 30,000.00
F/A Environmental Health & Safety Management	F/A	1	\$ 10,000.00	\$ 10,000.00

MISCELLANEOUS SUBTOTAL \$ 10,194,400.00

MISCELLANEOUS SUBTOTAL	\$ 10,194,400.00
COSTS SUBTOTAL	\$ 545,000.00
25% CONTINGENCY	\$ 2,684,850.00
TOTAL COSTS W CONTINGENCY	\$ 13,424,250.00
Construction Management	\$ 1,342,425.00
TOTAL COSTS W/ CM	\$ 14,766,675.00

Option E
Hydro Street to Manitou Avenue (Slide 22)
Relocate Overhead and Improve Individual Infrastructure Items

CONTRACT ITEM	UNIT	TOTALS	ITEM COST	TOTAL COST
DEMOLITION, EROSION CONTROL, AND ROADWAY				
Mill & Overlay Asphalt	SY	17,760	\$ 30.00	\$ 532,800.00
Potholing	HOURL	140	\$ 350.00	\$ 49,000.00
Staging Area- Fencing Etc	EACH	2	\$ 10,000.00	\$ 20,000.00
Outlet Protection	EACH	9	\$ 3,000.00	\$ 27,000.00
Silt Fence	LF	6,300	\$ 3.00	\$ 18,900.00
Storm Drain Inlet Protection (Type III)	EACH	27	\$ 3,000.00	\$ 81,000.00
Vehicle Tracking Pad	LS	1	\$ 5,000.00	\$ 5,000.00
Erosion Control Management	LS	1	\$ 25,000.00	\$ 25,000.00
Seeding (Native)	ACRE	1.0	\$ 5,000.00	\$ 5,000.00
Structural Sewer Lining	LF	5,627	\$ 60.00	\$ 337,620.00
Concrete washout	EACH	1	\$ 5,000.00	\$ 5,000.00
Concrete Pavement 6"	SY	410	\$ 115.00	\$ 47,150.00
Concrete Sidewalk	SY	3,500	\$ 60.00	\$ 210,000.00
Concrete Curb Ramp	SY	112	\$ 200.00	\$ 22,400.00
Curb and Gutter Type 2 (I-B)	LF	7,000	\$ 30.00	\$ 210,000.00
Curb and Gutter Type 2 (B)	LF	138	\$ 30.00	\$ 4,140.00
Manhole Replacements	EACH	17	\$ 20,000.00	\$ 340,000.00
Manhole- New	EACH	15	\$ 20,000.00	\$ 300,000.00
Stormwater Inlet	EACH	12	\$ 5,000.00	\$ 60,000.00
Reinforced Concrete Pipe 15"	LF	160	\$ 150.00	\$ 24,000.00
Reinforced Concrete Pipe 18"	LF	280	\$ 200.00	\$ 56,000.00
Reinforced Concrete Pipe 24"	LF	10	\$ 250.00	\$ 2,500.00
Reinforced Concrete Pipe 23" x 14"	LF	50	\$ 275.00	\$ 13,750.00
Hydronamic Seperator	EACH	2	\$ 100,000.00	\$ 200,000.00
Water Valve	EACH	25	\$ 5,000.00	\$ 125,000.00
Fire Hydrant Replacement	EACH	8	\$ 7,500.00	\$ 60,000.00
2" Conduit and Wire (Street Lighting)	LF	0	\$ 40.00	\$ -
Street Lights & Foundations	EACH	0	\$ 10,000.00	\$ -
Delineator (Flexible) (Type I)	EACH	73	\$ 125.00	\$ 9,125.00
Sign Panel (Class I)	SF	255	\$ 25.00	\$ 6,375.00
Steel Sign Post (1.75x1.75 Inch Tubing)	LF	420	\$ 25.00	\$ 10,500.00
Thermoplastic Pavement Marking	SF	1,400	\$ 24.00	\$ 33,600.00
Modified Epoxy Pavement Marking	GAL	300	\$ 300.00	\$ 90,000.00
DEMO, EROSION CONTROL, ROADWAY SUBTOTAL				\$ 2,930,860.00
MISCELLANEOUS/OPTIONS				
Mobilization	LS	1	\$ 439,700.00	\$ 439,700.00
Traffic Control	LS	1	\$ 732,800.00	\$ 732,800.00
F/A Minor Contract Revisions	F/A	1	\$ 732,800.00	\$ 732,800.00
Design Modifications - To Be Negotiated	LS	1	\$ 735,000.00	\$ 735,000.00
F/A Erosion Control	F/A	1	\$ 130,000.00	\$ 130,000.00
F/A Environmental Health & Safety Management	F/A	1	\$ 25,000.00	\$ 25,000.00
MISCELLANEOUS SUBTOTAL				\$ 2,795,300.00

MISCELLANEOUS SUBTOTAL	\$ 2,795,300.00
COSTS SUBTOTAL	\$ 2,930,860.00
25% CONTINGENCY	\$ 1,431,540.00
TOTAL COSTS W CONTINGENCY	\$ 7,157,700.00
Construction Management (10%)	\$ 715,770.00
TOTAL COSTS W/ CM	\$ 7,873,470.00

Option F
Incline Entrance to Manitou Avenue (Slide 25)
Relocate Overhead and Improve Individual Infrastructure Items

CONTRACT ITEM	UNIT	TOTALS	ITEM COST	TOTAL COST
DEMOLITION, EROSION CONTROL, AND ROADWAY				
Mill & Overlay Asphalt	SY	14,000	\$ 30.00	\$ 420,000.00
Potholing	HOURL	100	\$ 350.00	\$ 35,000.00
Staging Area- Fencing Etc	EACH	2	\$ 10,000.00	\$ 20,000.00
Outlet Protection	EACH	7	\$ 3,000.00	\$ 21,000.00
Silt Fence	LF	5,000	\$ 3.00	\$ 15,000.00
Storm Drain Inlet Protection (Type III)	EACH	24	\$ 3,000.00	\$ 72,000.00
Vehicle Tracking Pad	LS	1	\$ 5,000.00	\$ 5,000.00
Erosion Control Management	LS	1	\$ 25,000.00	\$ 25,000.00
Seeding (Native)	ACRE	1.0	\$ 5,000.00	\$ 5,000.00
Structural Sewer Lining	LF	4,554	\$ 60.00	\$ 273,240.00
Concrete washout	EACH	1	\$ 5,000.00	\$ 5,000.00
Concrete Pavement 6"	SY	410	\$ 115.00	\$ 47,150.00
Concrete Sidewalk	SY	3,100	\$ 60.00	\$ 186,000.00
Concrete Curb Ramp	SY	100	\$ 200.00	\$ 20,000.00
Curb and Gutter Type 2 (I-B)	LF	6,250	\$ 30.00	\$ 187,500.00
Curb and Gutter Type 2 (B)	LF	138	\$ 30.00	\$ 4,140.00
Manhole Replacements	EACH	17	\$ 20,000.00	\$ 340,000.00
Manhole- New	EACH	10	\$ 10,000.00	\$ 100,000.00
Stormwater Inlet	EACH	7	\$ 5,000.00	\$ 35,000.00
Reinforced Concrete Pipe 15"	LF	0	\$ 150.00	\$ -
Reinforced Concrete Pipe 18"	LF	210	\$ 200.00	\$ 42,000.00
Reinforced Concrete Pipe 24"	LF	0	\$ 250.00	\$ -
Reinforced Concrete Pipe 23" x 14"	LF	0	\$ 275.00	\$ -
Hydronamic Seperator	EACH	0	\$ 100,000.00	\$ -
Water Valve	EACH	20	\$ 5,000.00	\$ 100,000.00
Fire Hydrant Replacement	EACH	6	\$ 7,500.00	\$ 45,000.00
2" Conduit and Wire (Street Lighting)	LF	0	\$ 40.00	\$ -
Street Lights & Foundations	EACH	0	\$ 10,000.00	\$ -
Delineator (Flexible) (Type I)	EACH	73	\$ 125.00	\$ 9,125.00
Sign Panel (Class I)	SF	215	\$ 25.00	\$ 5,375.00
Steel Sign Post (1.75x1.75 Inch Tubing)	LF	350	\$ 25.00	\$ 8,750.00
Thermoplastic Pavement Marking	SF	800	\$ 24.00	\$ 19,200.00
Modified Epoxy Pavement Marking	GAL	250	\$ 300.00	\$ 75,000.00

DEMO, EROSION CONTROL, ROADWAY SUBTOTAL \$ 2,120,480.00

MISCELLANEOUS/OPTIONS				
Mobilization	LS	1	\$ 318,100.00	\$ 318,100.00
Traffic Control	LS	1	\$ 530,200.00	\$ 530,200.00
F/A Minor Contract Revisions	F/A	1	\$ 530,200.00	\$ 530,200.00
Design Modifications - To Be Negotiated	LS	1	\$ 650,000.00	\$ 650,000.00
F/A Erosion Control	F/A	1	\$ 100,000.00	\$ 100,000.00
F/A Environmental Health & Safety Management	F/A	1	\$ 20,000.00	\$ 20,000.00

MISCELLANEOUS SUBTOTAL \$ 2,148,500.00

MISCELLANEOUS SUBTOTAL	\$ 2,148,500.00
COSTS SUBTOTAL	\$ 2,120,480.00
25% CONTINGENCY	\$ 1,067,245.00
TOTAL COSTS W CONTINGENCY	\$ 5,336,225.00
Construction Management (10%)	\$ 533,622.50
TOTAL COSTS W/ CM	\$ 5,869,847.50

**Sidewalk Segment
Incline Entrance to Pilot Knob
Install sidewalk**

CONTRACT ITEM	UNIT	TOTALS	ITEM COST	TOTAL COST
DEMOLITION, EROSION CONTROL, AND ROADWAY				
Asphalt Removal	SY	940	\$ 15.00	\$ 14,100.00
Remove Concrete	SY	60	\$ 30.00	\$ 1,800.00
Concrete Pavement 6"	SY	370	\$ 115.00	\$ 42,550.00
Concrete Pavement 6" (Colored)	SF	1,200	\$ 15.00	\$ 18,000.00
Concrete Sidewalk	SY	360	\$ 60.00	\$ 21,600.00
Concrete Curb Ramp	EACH	4	\$ 1,250.00	\$ 5,000.00
Curb and Gutter Type 2 (B)	LF	460	\$ 30.00	\$ 13,800.00
Delineator (Flexible) (Type I)	EACH	73	\$ 125.00	\$ 9,125.00
DEMO, EROSION CONTROL, ROADWAY SUBTOTAL				\$ 125,975.00
MISCELLANEOUS/OPTIONS				
Mobilization	LS	1	\$ 10,000.00	\$ 10,000.00
Traffic Control	LS	1	\$ 10,000.00	\$ 10,000.00
F/A Minor Contract Revisions	F/A	1	\$ -	\$ -
Design Modifications - To Be Negotiated	LS	1	\$ -	\$ -
F/A Change Orders Due to Unknown Conditions	F/A	0	\$ -	\$ -
F/A Erosion Control	F/A	1	\$ -	\$ -
F/A Environmental Health & Safety Management	F/A	1	\$ -	\$ -
MISCELLANEOUS SUBTOTAL				\$ 20,000.00

MISCELLANEOUS SUBTOTAL	\$ 20,000.00
COSTS SUBTOTAL	\$ 125,975.00
20% CONTINGENCY	\$ 29,195.00
TOTAL COSTS W CONTINGENCY	\$ 175,170.00
Construction Management (10%)	\$ 17,517.00
TOTAL COSTS W/ CM	\$ 192,687.00

Sidewalk Segment
Incline Entrance to Pilot Knob
Install sidewalk and resurface roadway

CONTRACT ITEM	UNIT	TOTALS	ITEM COST	TOTAL COST
DEMOLITION, EROSION CONTROL, AND ROADWAY				
Asphalt Removal	SY	940	\$ 15.00	\$ 14,100.00
Remove Concrete	SY	60	\$ 30.00	\$ 1,800.00
Mill & Overlay Asphalt	SY	2,550	\$ 30.00	\$ 76,500.00
Concrete Pavement 6"	SY	370	\$ 115.00	\$ 42,550.00
Concrete Pavement 6" (Colored)	SF	1,200	\$ 15.00	\$ 18,000.00
Concrete Sidewalk	SY	360	\$ 60.00	\$ 21,600.00
Concrete Curb Ramp	EACH	4	\$ 1,250.00	\$ 5,000.00
Curb and Gutter Type 2 (B)	LF	460	\$ 30.00	\$ 13,800.00
Delineator (Flexible) (Type I)	EACH	73	\$ 125.00	\$ 9,125.00
DEMO, EROSION CONTROL, ROADWAY SUBTOTAL				\$ 202,475.00
MISCELLANEOUS/OPTIONS				
Mobilization	LS	1	\$ 10,000.00	\$ 10,000.00
Traffic Control	LS	1	\$ 10,000.00	\$ 10,000.00
F/A Minor Contract Revisions	F/A	1	\$ -	\$ -
Design Modifications - To Be Negotiated	LS	1	\$ -	\$ -
F/A Change Orders Due to Unknown Conditions	F/A	0	\$ -	\$ -
F/A Erosion Control	F/A	1	\$ -	\$ -
F/A Environmental Health & Safety Management	F/A	1	\$ -	\$ -
MISCELLANEOUS SUBTOTAL				\$ 20,000.00

MISCELLANEOUS SUBTOTAL	\$ 20,000.00
COSTS SUBTOTAL	\$ 202,475.00
20% CONTINGENCY	\$ 44,495.00
TOTAL COSTS W CONTINGENCY	\$ 266,970.00
Construction Management (10%)	\$ 26,697.00
TOTAL COSTS W/ CM	\$ 293,667.00

IGA OPTION LETTER

Date 01/23/2025	State Fiscal Year 2025	Option Letter No. 3
Project Code STE M850-026 (21817)	Original Contract # 17-HA2-XC-00013	

Vendor Name: **CITY OF MANITOU SPRINGS****SUBJECT**

Option to extend Agreement Term and/or Phase Term and/or modify OMB Uniform Guidance Information.

REQUIRED PROVISIONS

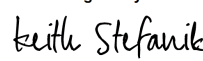
In accordance with Section 7.E.iv of the original Agreement referenced above, as amended, the State hereby authorizes the Local Agency to update a Phase Performance Period and/or modify OMB Uniform Guidance Information. A new **Exhibit C-4** is made part of the original Agreement and replaces **Exhibit C-3**.

OPTION EFFECTIVE DATE

The effective date of this option letter is upon approval of the State Controller or delegate.

APPROVALS**State of Colorado:****Jared S. Polis, Governor**

DocuSigned by:

Date: 2/11/2025By: **Keith Stefanik, P.E.,** Chief EngineerFor: **Shoshana M. Lew,** Executive Director, Colorado Department of Transportation**ALL CONTRACTS MUST BE APPROVED BY THE STATE CONTROLLER**

CRS §24-30-202 requires the State Controller to approve all State Contracts. This Contract is not valid until signed and dated below by the State Controller or delegate. Contractor is not authorized to begin performance until such time. If Contractor begins performing prior thereto, the State of Colorado is not obligated to pay Contractor for such performance or for any goods and/or services provided hereunder.

State Controller**Robert Jaros, CPA, MBA, JD**

DocuSigned by:

By: BDA801C5CFAC478...Date: 2/11/2025

Federal \$ LA Work ROW

EXHIBIT C-4 - FUNDING PROVISIONS**City of Manitou Springs - STE M850-026 (21817)****A. Cost of Work Estimate**

The Local Agency has estimated the total cost of the Work to be \$5,329,962.00, which is to be funded as follows:

1. BUDGETED FUNDS

a.	Federal Funds (82.79% of MPP Award)	\$4,412,676.00
b.	Local Agency Funds (17.21% of MPP Award)	\$917,286.00

TOTAL BUDGETED FUNDS	\$5,329,962.00
-----------------------------	-----------------------

2. OMB UNIFORM GUIDANCE

a.	Federal Award Identification Number (FAIN):	693JJ22030000Z230COM850026 693JJ22330000Y230COM850026
b.	Name of Federal Awarding Agency:	FHWA
c.	Local Agency Unique Entity Identifier	CHN4X8WEEKH1
d.	Assistance Listing # Highway Planning and Construction	ALN 20.205
e.	Is the Award for R&D?	No
f.	Indirect Cost Rate (if applicable)	N/A
g.	Amount of Federal Funds Obligated by this Action:	\$0.00
h.	Amount of Federal Funds Obligated to Date (including this Action):	\$767,210.00

3. ESTIMATED PAYMENT TO LOCAL AGENCY

a.	Federal Funds Budgeted	\$4,412,676.00
b.	Less Estimated Federal Share of CDOT-Incurred Costs	\$0.00

TOTAL ESTIMATED PAYMENT TO LOCAL AGENCY	82.79%	\$4,412,676.00
TOTAL ESTIMATED FUNDING BY LOCAL AGENCY	17.21%	\$917,286.00
TOTAL PROJECT ESTIMATED FUNDING	100.00%	\$5,329,962.00

4. FOR CDOT ENCUMBRANCE PURPOSES

a.	Total Encumbrance Amount (Federal funds + Local Agency funds)	\$5,329,962.00
b.	Less ROW Acquisition 3111 and/or ROW Relocation 3109	\$100,000.00
	Federal 82.79% of ROW	\$82,790.00
	Local Agency 17.21% of ROW	\$17,210.00

NET TO BE ENCUMBERED BY CDOT IS AS FOLLOWS	\$5,229,962.00
---	-----------------------

Note: Only \$926,694.00 in ROW and Design funds are currently available. Additional funds will become available after execution of an Option letter (Exhibit B) or formal Amendment.

WBS Element 21817.10.10	Performance Period Start*/End Date 02/28/2019-03/31/2027	ROW 3114	\$95,000.00
WBS Element 21817.10.30	Performance Period Start*/End Date 02/28/2019-03/31/2027	Design 3020	\$831,694.00
WBS Element 21817.20.10	Performance Period Start*/End Date TBD-TBD	Const. 3301	\$0.00

*The Local Agency should not begin work until all three (3) of the following are in place: 1) Phase Performance Period Start Date; 2) the execution of the document encumbering funds for the respective phase; and 3) Local Agency receipt of the official Notice to Proceed. Any work performed before these three (3) milestones are achieved will not be reimbursable.

B. Funding Ratios

The funding ratio for the federal funds for this Work is 82.79% federal funds to 17.21% Local Agency funds, and this ratio applies only to the \$5,329,962.00 that is eligible for federal funding. All other costs are borne by the Local Agency at 100%. If the total cost of performance of the Work exceeds \$5,329,962.00, and additional federal funds are not available, the Local Agency shall pay all such excess costs. If the total cost of performance of the Work is less than \$5,329,962.00, then the amounts of Local Agency and federal funds will be decreased in accordance with the funding ratio described herein. **This applies to the entire scope of Work.**

C. Maximum Amount Payable

The maximum amount payable to the Local Agency under this Agreement shall be \$4,329,886.00 (federal funds of \$4,412,676.00 minus federal share of ROW of \$82,790.00). For CDOT accounting purposes, the federal funds of \$4,329,886.00 and the Local Agency matching funds of \$900,076.00 (Local Agency funds of \$917,286.00 minus Local Agency share of ROW of \$17,210.00) will be encumbered for a total encumbrance of \$5,229,962.00, unless this amount is increased by an executed amendment before any increased cost is incurred. The total budget is \$5,329,962.00, unless this amount is increased by an executed amendment before any increased cost is incurred. The total cost of the Work is the best estimate available, based on the design data as approved at the time of execution of this Agreement, and any cost is subject to revisions agreed to by the parties prior to bid and award. **This applies to the entire scope of Work.**

D. Single Audit Act Amendment

All state and local government and non-profit organizations receiving \$750,000 or more from all funding sources defined as federal financial assistance for Single Audit Act Amendment purposes shall comply with the audit requirements of 2 CFR part 200, subpart F (Audit Requirements) see also, 49 CFR 18.20 through 18.26. The Single Audit Act Amendment requirements applicable to the Local Agency receiving federal funds are as follows:

i. Expenditure less than \$750,000

If the Local Agency expends less than \$750,000 in Federal funds (all federal sources, not just Highway funds) in its fiscal year then this requirement does not apply.

ii. Expenditure of \$750,000 or more-Highway Funds Only

If the Local Agency expends \$750,000 or more, in Federal funds, but only received federal Highway funds (Catalog of Federal Domestic Assistance, CFDA 20.205) then a program specific audit shall be performed. This audit will examine the "financial" procedures and processes for this program area.

iii. Expenditure of \$750,000 or more-Multiple Funding Sources

If the Local Agency expends \$750,000 or more in Federal funds, and the Federal funds are from multiple sources (FTA, HUD, NPS, etc.) then the Single Audit Act applies, which is an audit on the entire organization/entity.

iv. Independent CPA

Single Audit shall only be conducted by an independent CPA, not by an auditor on staff. An audit is an allowable direct or indirect cost.



Memorandum

Title: Proposal to Adopt a 20 MPH Speed Limit in Residential Neighborhoods
From: Roy Chaney - Deputy City Administrator/Public Services Director, Chief Bill Otto - Manitou Springs Police Department
To: Mayor and City Council
CC: City Administrator Denise Howell
Allocated Time: 30 Minutes

April 8, 2025

Purpose:

To propose a reduction in the default speed limit for residential neighborhoods within Manitou Springs to 20 mph. This initiative aims to enhance pedestrian and cyclist safety, improve community livability, and align with broader traffic safety goals such as Vision Zero.

Background:

The City of Manitou Springs values the safety and livability of its neighborhoods. To support these priorities, staff propose the adoption of a 20 mph speed limit for local residential streets, similar to the policy recently implemented in Denver, Colorado. Studies have shown that lower speed limits reduce the frequency and severity of traffic incidents, particularly in areas with pedestrian activity, narrow streets, and limited visibility, all of which are common in Manitou Springs.

Current Speed Limit Regulations

According to Section 10.04.020 (24) of the Manitou Springs City Code, which aligns with Section 1101(7) of the Model Traffic Code, the city has adopted the following maximum lawful speed limits:

1. Residential districts not posted: Twenty-five (25) miles per hour.
2. Nonresidential districts not posted: Thirty-five (35) miles per hour.
3. The speed posted on standard signs erected by the city.
4. Except when a special hazard exists that requires a lower speed than set forth in this section, the foregoing speed limits are reasonable and prima facie speed limits.

This proposal seeks to amend the existing ordinance to reduce the default residential speed limit to 20 mph, reflecting a more community-centered approach to safety. Additionally, the ordinance proposes to set the maximum lawful speed limits as follows:



1. Residential districts not posted: Twenty (20) miles per hour.
2. Nonresidential districts not posted: Twenty (20) miles per hour.
3. The sapped posted on standard signs erected by the city.

Supporting Data Research consistently demonstrates that reducing speed limits in residential areas saves lives and reduces injuries:

- Risk of Fatalities: A study by the AAA Foundation for Traffic Safety found that pedestrians struck by a vehicle at 20 mph have a 10% risk of severe injury or death, compared to a 25% risk at 25 mph and a 50% risk at 30 mph.
- Crash Reduction: Cities like Seattle and Portland have reported significant decreases in traffic-related injuries and fatalities after implementing 20 mph limits on residential streets.
- Livability: Reduced speeds create safer environments for walking, cycling, and outdoor activities, contributing to the overall quality of life in neighborhoods.

Evidence Supporting Lower Speed Limits

- AAA Foundation for Traffic Safety: Risk of severe injury or death significantly decreases at lower speeds. (Impact Speed and a Pedestrian's Risk of Severe Injury or Death - [AAA Foundation for Traffic Safety](#))
- Seattle Vision Zero: Demonstrated success in reducing injuries and fatalities with 20 mph limits. (Speed Limits - [Transportation - Seattle.gov](#))
- National Association of City Transportation Officials (NACTO): Highlights the correlation between lower speeds and safer streets. ([NACTO Releases City Limits, an Innovative Framework to Set Safe Speed Limits on City Streets](#) - NACTO)

Implementation Plan

- Signage: The City will install speed limit signs at strategic locations.
- Community Outreach: Partner with local organizations and residents to raise awareness through meetings and outreach programs.
- Enforcement: Work with the Police Department to ensure compliance with the new limit through a phased approach that initially focuses on education and warnings.



Pros and Cons:

Pros:

- Enhances pedestrian and cyclist safety by reducing crash severity.
- Encourages a more livable and walkable neighborhood environment.
- Aligns with regional and national Vision Zero initiatives aimed at reducing traffic-related fatalities.
- May reduce noise pollution and create a calmer traffic flow.
- Supports long-term community planning goals for safer streets.

Cons:

- Requires financial investment for new signage and potential enforcement measures.
- May be met with resistance from drivers accustomed to higher speed limits.
- Could lead to enforcement challenges and community concerns regarding traffic citations.
- Potential minor delays for vehicle travel times within residential areas.

Fiscal Impact:

The estimated cost for new signage is within our current budget.

Workload Impact:

Only if a speed reduction is requested and supported by a traffic-calming study, City staff will coordinate the installation of new signage across residential areas.

- The Public Information Officer (PIO) will handle public outreach and education, which should have minimal impact on overall city resources and operations.
- The Police Department may need to adjust enforcement strategies to include an initial period of warnings before citations are issued.
- Periodic reviews of traffic patterns and the effectiveness of the speed reduction will require staff involvement.

Recommended Action:

Staff is seeking direction from the Council on the proposed ordinance.



This proposal was supported by the Mobility and Parking Board unanimously, but it recommended we make ALL roads 20 MPH in the city unless otherwise posted and remove the "Nonresidential districts not posted: Thirty-five miles per hour" in the code. Supported by the Manitou Springs Police Department.

Proposed Reduction of Residential Speed Limit to 20 MPH



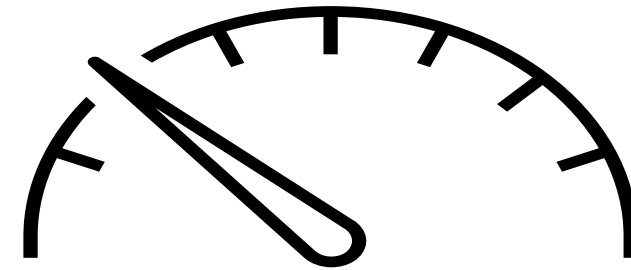
Enhancing Safety and Livability in Manitou Springs

Roy Chaney, Deputy City Administrator & Police Chief Bill Otto



Purpose of Proposal

- Reduce residential speed limit to 20 mph
- Enhance pedestrian and cyclist safety
- Improve community livability
- Align with Vision Zero goals





- # Why 20 MPH?

- **10% risk** of severe injury at 20 mph (AAA Study)
- **25% risk** at 25 mph
- **50% risk** at 30 mph
- Slower speeds = **safer, calmer neighborhoods**

Current Speed Limit (City Code)



- **Residential (unposted):** 25 mph
- **Nonresidential (unposted):** 35 mph
- **Proposal:**
 - Residential (unposted): **20 mph**
 - Nonresidential (unposted): **20 mph** (*unless otherwise posted*)

Supporting Evidence



- Seattle & Portland:** Fewer injuries, fewer fatalities after 20 mph limits
- NACTO:** Lower speed = safer streets
- Vision Zero:** National strategy adopted by cities for zero traffic deaths

Implementation Plan



- Signage:** Install at key locations
- Outreach:** Led by PIO, community-based awareness
- Enforcement:** Start with education and warnings



Costs & Resources

- Signage costs are **within budget**
- Outreach via **existing city staff**
- Police Department will phase in enforcement
- Ongoing **staff reviews** of effectiveness



Pros and Cons

Pros:

- Safer streets
- Supports walkability
- Reduces noise & speeding
- Aligns with city goals

Cons:

- Cost of signage & Enforcement
- Driver resistance
- Minor travel delays

Recommendation



- **Approve ordinance** to establish 20 mph default speed citywide
- **Amend Code:** Remove 35 mph nonresidential default
- Supported by **Mobility and Parking Board – Unanimous**
- Supported by **the Manitou Springs Police Department**

COUNCIL BILL NO. _____

ORDINANCE NO. _____

ORDINANCE

AN ORDINANCE OF THE CITY OF MANITOU SPRINGS, COLORADO, AMENDING SECTION 10.04.020(24) OF THE MANITOU SPRINGS MUNICIPAL CODE TO REDUCE THE DEFAULT SPEED LIMIT ON CITY STREETS TO 20 MILES PER HOUR

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MANITOU SPRINGS, COLORADO:

WHEREAS, the City Council desires to reduce the default speed limit to 20 miles per hour for all residential and non-residential streets in the City when not posted otherwise.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MANITOU SPRINGS, COLORADO, THAT:

Section 1: Section 10.04.020(24) of the Manitou Springs Municipal Code is hereby amended to read as follows:

Pursuant to Section 1101(7) of the Model Traffic Code, the city adopts the following maximum lawful speed limits:

- a. Residential districts not posted: Twenty miles per hour.
- b. Nonresidential districts not posted: Twenty miles per hour.
- c. The speed posted on standard signs erected by the city.
- d. Except when a special hazard exists that requires lower speed than set forth in this section, the foregoing speed limits are reasonable and prima facie speed limits.

Section 2. If any article, section, paragraph, sentence, clause or phrase of this ordinance is held to be unconstitutional or invalid for any reason, such decision shall not affect the validity or constitutionality of the remaining portions of this ordinance. The City Council hereby declares that it would have passed this ordinance and each part or parts hereof irrespective of the fact that any one part or parts be declared unconstitutional or invalid.

Section 3. This ordinance is deemed necessary for the protection of the health, welfare and safety of the community.

Section 4. This ordinance shall take effect five (5) days after publication following final passage.

Passed on first reading and ordered published this ____ day of _____ 2025.

City Clerk, Elena Krebs

A Public Hearing on this ordinance will be held at the _____, 2025 City Council meeting. The City Council Meeting will be held at 6:00 P.M. at City Hall, 606 Manitou Avenue, Manitou Springs, Colorado.

Ordinance Published: _____, 2025. (in full)

City's Official Website and City Hall

Passed on second reading and adopted by Council this ____ day of _____ 2025.

Mayor, John Graham

Attest: _____
City Clerk, Elena Krebs

Published: _____, 2025 (in full)
City's Official Website and City Hall