

# CITY OF WEST CHICAGO

WHERE HISTORY & PROGRESS MEET

## INFRASTRUCTURE COMMITTEE

**Thursday October 6, 2016  
7:00 P.M. – Committee Room A**

### AGENDA

1. Call to Order, Roll Call, and Establishment of a Quorum
2. Approval of Minutes
  - A. Infrastructure Committee of September 1, 2016
3. Public Participation / Presentations
4. Items for Consent
  - A. Resolution No. 16-R-0047 – Contract Award – 2016 Roadway Curb and Gutter Rehabilitation Program
  - B. Ordinance No. 16-O-0035 – Authorizing the Disposal of Surplus Equipment, Stock Inventory, and/or Personal Property Owned by the City of West Chicago
  - C. Replacement of Water Treatment Plant Process Flow Monitoring and Metering Devices
5. Items for Discussion
  - A. 2017 Washington Street Rehabilitation Project<sup>1</sup>
6. Unfinished Business
7. New Business
8. Reports from Staff
9. Adjournment

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<sup>1</sup> No Agenda Item Summary Included – To Be Distributed At Meeting

# CITY OF WEST CHICAGO

Draft

WHERE HISTORY & PROGRESS MEET

## MINUTES

### INFRASTRUCTURE COMMITTEE

September 1, 2016 7:00 P.M.

1. **Call to Order, Roll Call, and Establishment of a Quorum.** Chairman Beifuss called the meeting to order at 7:02 P.M. Roll call found Aldermen James Beifuss, Sandra Dimas, Mark Edwalds, Alton Hallett, and Noreen Ligino-Kubinski present. Alderman John Smith was absent.

Staff present included Director of Public Works Robert Flatter, Assistant Director of Public Works Tim Wilcox, and Executive Secretary of Public Works Ashley Cunningham. Also in attendance was Wayne White of Emerald Tree Care and George Garcia (resident).

2. **Approval of Minutes**

A. **Infrastructure Committee Minutes of July 7, 2016.** Alderman Hallett made a motion, seconded by Alderman Edwalds to approve the Meeting Minutes of July 7, 2016. Voting Yea: Aldermen Beifuss, Dimas, Edwalds, Hallett, and Ligino-Kubinski. Voting Nay: 0.

3. **Public Participation / Presentations.** None.

4. **Items for Consent.** Alderman Edwalds requested discussion on Consent Item A, Alderman Beifuss requested discussion on Consent Item D. Alderman Beifuss requested a correction to remove the word "one" from the title/description for Consent Item E on the agenda. Alderman Dimas made a motion, seconded by Alderman Hallett to approve:

B. **Change Order #1 and Final – A. Eugene Rennels Bridge Concrete and Deck Overlay Project**

C. **Change Order #1 and Final – 2016 Forestry Maintenance Program**

E. **Purchase of one Thawrox Deicer from Compass Minerals America, Inc., Overland Park, Kansas**

Voting Yea: Aldermen Beifuss, Dimas, Edwalds, Hallett, and Ligino-Kubinski. Voting Nay: 0.

5. **Items for Discussion.** Items for discussion also include Consent Items 4.A. and 4.D.

4.A. **Resolution No. 16-R-0043 – Contract Award – Builders Paving for the 2016 Street Resurfacing Program (Cornerstone Lakes Subdivision).** Alderman Edwalds asked if in paragraph two, line two of the Agenda Summary, "Bidders Paving" should be corrected to "Builders Paving". Mr. Flatter confirmed this should be corrected and apologized for the error. Alderman Beifuss inquired as to why Builders Paving's bid of \$377,300.00 came in 22% below the engineer's estimate of \$487,656.50. Mr. Flatter explained that there were three contributing factors for this difference in price. The biggest factor was due to the current price of asphalt. Of the roughly

\$110,000.00 difference in estimated price, about \$70,000.00 of that was attributed to the price of asphalt-related material. There was also an \$11,000.00 savings for traffic control. Sometimes contractors will pad line items like this because it is a guaranteed pay item, which was part of the reason why the engineers estimated \$15,000.00 for traffic control based upon their opinion and experience. The third factor was a \$14,000.00 savings on reflective crack control. These savings accounted for most of the price differences and the remaining was attributed to miscellaneous costs. The low cost of oil, the lack of asphalt paving jobs being conducted this year amongst municipalities, and the lack of asphalt paving jobs with IDOT have all contributed to decreased costs overall for these types of projects. Alderman Beifuss also asked if the references for Builders Paving checked out. Mr. Flatter explained that this will be the first time the City contracts with Builders Paving, and the references checked out great. There were no further questions.

**Alderman Edwalds made a motion seconded by Alderman Ligino-Kubinski to approve.**

**Voting Yea: Aldermen Beifuss, Dimas, Edwalds, Hallett, and Ligino-Kubinski. Voting Nay: 0.**

**4.D. Purchase of one 2016 Vactor Plus 2110 Sewer Cleaning Truck – Standard Equipment Company of Chicago, Illinois.** Mr. Flatter explained that the staff has asked for the purchase of a 2016 Vactor Plus 2110 Sewer Cleaning Truck mounted on a Peterbilt Single Axis Chassis for \$386,824.00. They had plans to replace the sewer flusher truck in the budget for this year. The flusher truck is a box truck with a 1,500 pound water tank and 600 foot hose reel that is used to flush the sanitary and storm sewer lines. The vehicle is a 2001 truck that has outlived its useful life and is up for replacement. Mr. Flatter went on to explain that flushing is a very important component of sewer cleaning, but it is only one of two components. The other component is to literally vacuum or excavate the material out of the sewer lines once it has been flushed. These Vactor trucks are also used for hydro excavating, for instance, when a b-box needs to be straightened. The price of a Vactor unit alone is about \$250,000.00. The department has a 2014 Vactor presently, but when that machine is down there is no backup to rely on. After some deliberation, staff decided it would be more reliable to have two Vactors rather than solely replace the flusher truck. They will also be trading in their 1993 Vactor to Standard Equipment and receive \$10,000.00 for it. Currently that vehicle needs about \$45,000 worth of work. In 2006 it was rehabbed for \$130,000.00 and they got about ten more years out of it, but at this point it is just not prudent to put the additional \$45,000.00 into it. There is \$206,000.00 in the budget to replace the flusher, and there are adequate reserves in the Capital Equipment Replacement Fund to cover the difference of the 2016 Vactor. Alderman Beifuss asked what would be done with the flusher that would be replaced, and Mr. Flatter explained that it would be put up for auction. It is believed that the flusher could be sold for \$50,000.00-\$60,000.00. There were no further questions.

**Alderman Dimas made a motion seconded by Alderman Edwalds to approve.**

**Voting Yea: Aldermen Beifuss, Dimas, Edwalds, Hallett, and Ligino-Kubinski. Voting Nay: 0.**

**6. Unfinished Business.** None.

**7. New Business.** None.

**8. Reports from Staff.**

**A. Emerald Ash Borer Insecticidal Treatment Program Update.** Wayne White of Emerald Tree Care was in attendance to discuss the 2015 report he created for the City of West Chicago regarding the current status and future predictions of the Emerald Ash Borer Insecticidal Treatment Program which he has been handling for roughly the last six years through chemical treatments. Tim Wilcox went on to explain that the Ash Borer was discovered in this area in 2010, and Graf Tree Care was hired to do an inventory of the trees and found that the City had 2,446 ash trees. Since that time Mr. White has found several that were missed during that initial inventory. Of those, 593 trees had to be removed because they were so heavily damaged, which was about 25% of West Chicago's ash tree population. In 2011, Mr. White was hired to treat the remaining 1,853 trees. Mr. White explained that treatment began in August of 2011, which may have put some of the trees at a disadvantage since treatment should usually begin in the spring. It was originally estimated that the City would lose 30% of its ash trees, but to date only about 20% have been lost. Mr. White said the good news is that the City is "over the hump" because as the trees die, the ash borer cannot reproduce or live on dead trees and the insecticidal treatment on living trees will kill and stop the others. Presently about 80% of the trees are considered healthy, and Mr. White theorizes that switching to a two-year chemical next year may mean it is the last time the trees ever have to be injected. Alderman Dimas asked what would stop the ash borer from coming back once treatment has stopped. Mr. White explained that the insect cannot come back because when they hatch from their egg, they do not wander around and look for food. They bore straight into the tree and if they do not find food they die, so there is no adult to continue on to the following year and reproduce. There is also some residual insecticide in the tree once treatment has stopped and there are at-home treatments that can be used to continue treating those affected trees. Alderman Beifuss mentioned that initially a cost-benefit analysis was done to determine whether long-term treatment or removal made more sense, and it seems that the treatment has been the right choice given that it has saved so many mature trees that provide shade and increase home values. Alderman Hallett asked for clarification on the cost for the two-year chemical. Mr. White explained that the current injection costs \$2.90 per inch in diameter and the two-year treatment would be an additional \$0.30 per inch in diameter, but labor costs would remain the same. Alderman Hallett asked how Mr. White could know that two more years of treatment would suffice, and Mr. White explained that his experience with his work in Michigan, which he has worked with for a longer period of time, has given him some insight and professional experience that leads him to that conclusion. Mr. Flatter explained that this was merely an update on the program and no action was required. There is one more year of treatment left presently, and next year the City will need to decide whether or not to continue treatment, stop treatment, or change course and use the two-year chemical.

**9. Adjournment.** At 7:43 P.M., Alderman Dimas made a motion to adjourn, seconded by Alderman Hallett. Motion was unanimously approved by voice vote.

Respectfully submitted,

Ashley Cunningham  
Executive Secretary of Public Works



## CITY OF WEST CHICAGO

### INFRASTRUCTURE COMMITTEE AGENDA ITEM SUMMARY

**ITEM TITLE:**

Resolution No. 16-R-0047 – Contract Award – 2016 Roadway Curb and Gutter Rehabilitation Program

**AGENDA ITEM NUMBER:**

4. A.

**COMMITTEE AGENDA DATE:** October 6, 2016

**COUNCIL AGENDA DATE:** October 17, 2016

**STAFF REVIEW:** Robert E. Flatter, P.E., Director of Public Works

**SIGNATURE**



**APPROVED BY CITY ADMINISTRATOR:** Michael L. Guttman

**SIGNATURE**

\_\_\_\_\_

**ITEM SUMMARY:**

For Fiscal Year 2016, \$60,000.00 is budgeted within the Capital Projects Fund (08-34-53-4848) for curb and gutter rehabilitation. Generally, the normal method of curb and gutter repair is removal and replacement of the full-depth curb section. The focus of this program is to restore structurally sound sections of damaged, unattractive curb and gutter using an alternative, less expensive form of curb repair known as pneumatic shotcrete repair. Shotcrete repair utilizes a method of pneumatic curb removal using chipping hammers followed by sandblasting and application of wet-mix type cement with a shotcrete sprayer where the surface is contoured and finished to match the adjacent curb and gutter sections.

Staff is aware of only one experienced contractor in the area that performs pneumatic shotcrete in compliance with strict structural guarantees outlined in the Illinois Department of Transportation (IDOT) specifications. A pilot program was initiated in 2014 with a contract being awarded to Robert H. Ward & Associates, Inc. (Ward) of South Chicago Heights, Illinois for locations within the Forest Trails Subdivision. Ward completed repairs in approximately half of the Forest Trails Subdivision and has since been non-responsive to staff's request to return and finalize its work.

Given Ward's failure to perform, staff sought out other contractors willing to address curb deficiencies within the Forest Trails Subdivision and within the Jel-Sert II Industrial Park (Charles Court, Wegner Drive, and Helena Drive, located within an industrial park complex south of West Washington Street); approximately 280 locations. Areatha Construction Company, Inc. of Streamwood, Illinois (the contractor who completed the A. Eugene Rennels Bridge Concrete and Deck Overlay Project) has experience with concrete repairs (similar to shotcrete) on bridge deck surfaces. Using a product known as SikaQuick® 2500 very rapid hardening, repair mortar (IDOT approved as a Packaged, Dry, Rapid Hardening, Cementitious Material for Concrete Repairs), Areatha demonstrated their abilities on two curb locations within the Jel-Sert II Industrial Park. As a result, Areatha was given an initial contract within the City Administrator's spending authority to address 115 locations within the Forest Trails Subdivision.

To address remaining 165 locations identified for this year's program, staff is asking City Council to waive competitive bidding and approve a contract with Areatha Construction Company, Inc. for an amount not to exceed \$28,545.00.

**ACTIONS PROPOSED:**

That the City Council waive competitive bidding and approve Resolution No. 16-R-0047 authorizing the Mayor to execute a Contract with Areatha Construction Company, Inc. of Streamwood, Illinois, in an amount not to exceed \$28,545.00 for the 2016 Roadway Curb and Gutter Rehabilitation Program.

**RESOLUTION NO. 16-R-0047**

**A RESOLUTION AUTHORIZING THE MAYOR TO EXECUTE  
A CONTRACT AGREEMENT WITH AREATHA CONSTRUCTION  
COMPANY, INC. FOR SERVICES RELATED TO THE 2016 ROADWAY CURB  
AND GUTTER REHABILITATION PROGRAM**

BE IT RESOLVED by the City Council of the City of West Chicago, in regular session assembled, that the Mayor is hereby authorized to execute a Contract Agreement for Services related to the 2016 Roadway Curb and Gutter Rehabilitation Program, between the City of West Chicago and Areatha Construction Company, Inc., for an amount not to exceed \$28,545.00, in substantially the form attached hereto and incorporated herein as Exhibit "A".

APPROVED this 17<sup>th</sup> day of October, 2016.

AYES: \_\_\_\_\_

NAYES: \_\_\_\_\_

ABSTAIN: \_\_\_\_\_

ABSENT: \_\_\_\_\_

\_\_\_\_\_  
Mayor Ruben Pineda

ATTEST:

\_\_\_\_\_  
City Clerk Nancy M. Smith

## CITY OF WEST CHICAGO

### INFRASTRUCTURE COMMITTEE AGENDA ITEM SUMMARY

**ITEM TITLE:**

Ordinance No. 16-O-0035 – Authorizing the Disposal of Surplus Equipment, Stock Inventory, and/or Personal Property Owned By the City Of West Chicago

**AGENDA ITEM NUMBER:**4.B.**COMMITTEE AGENDA DATE:** October 6, 2015**COUNCIL AGENDA DATE:** October 17, 2015**STAFF REVIEW:** Robert E. Flatter, P.E., Public Works Director**SIGNATURE****APPROVED BY CITY ADMINISTRATOR:** Michael L. Guttman**SIGNATURE****ITEM SUMMARY:**

City staff has identified surplus equipment, stock inventory, and/or personal property that has no useful life and is no longer useful to the City, has little or no salvage value, and should be properly disposed of (please refer to Ordinance No. 16-O-0035 and Attachment A for additional information).

Therefore, staff is requesting that these items be declared surplus so that they may be traded in, disposed of through auction, disposed of through the City's contractual waste hauler, recycled, or sold to a local scrap dealer for scrap value; in a manner deemed appropriate by the City Administrator, with or without consideration.

**ACTIONS PROPOSED:**

Adopt Ordinance No. 16-O-0035 for the disposal or sale of surplus equipment, stock inventory, and/or personal property owned by the City of West Chicago.

**COMMITTEE RECOMMENDATION:**

**ORDINANCE NO. 16-O-0035**

**AN ORDINANCE AUTHORIZING THE DISPOSAL OF SURPLUS EQUIPMENT,  
STOCK INVENTORY, AND/OR PERSONAL PROPERTY OWNED BY THE  
CITY OF WEST CHICAGO**

WHEREAS, in the opinion of the corporate authorities of the City of West Chicago, it is no longer necessary or useful to or for the best interests of the City of West Chicago, to retain ownership of the surplus equipment, stock inventory, and/or personal property hereinafter described; and,

WHEREAS, it has been determined by the City Council of the City of West Chicago to properly dispose of said surplus equipment, stock inventory, and/or personal property.

NOW, THEREFORE, BE IT ORDAINED by the City Council of the City of West Chicago, Illinois, in regular session assembled as follows:

SECTION 1. Pursuant to 65 ILCS 5/11-76-4, the City Council of the City of West Chicago finds that the surplus equipment, stock inventory, and/or personal property listed on Attachment A are no longer necessary or useful to the City of West Chicago and the best interests of the City of West Chicago will be served by their disposal.

SECTION 2. Pursuant to said Statute, the City Administrator is hereby authorized and directed to dispose of the aforementioned surplus equipment, stock inventory, and/or personal property in any manner deemed appropriate, with or without consideration.

SECTION 3. All ordinances and resolutions, or parts thereof, in conflict with the provisions of this Ordinance are, to the extent of such conflict, hereby repealed.

SECTION 4. That this Ordinance shall be in full force and effect ten (10) days from and after its passage, approval, and publication in pamphlet form as provided by law.

PASSED this 17<sup>th</sup> day of October 2016.

Alderman L. Chassee \_\_\_\_\_  
Vacant – Ward 2 \_\_\_\_\_  
Alderman L. Grodoski \_\_\_\_\_  
Alderman S. Dimas \_\_\_\_\_  
Alderman J.C. Smith, Jr. \_\_\_\_\_  
Alderman G. Garcia \_\_\_\_\_  
Alderman J. Banas \_\_\_\_\_

Alderman J. Beifuss \_\_\_\_\_  
Alderman J. Sheahan \_\_\_\_\_  
Alderman A. Hallett \_\_\_\_\_  
Alderman M. Ferguson \_\_\_\_\_  
Alderman K. Meissner \_\_\_\_\_  
Alderman R. Stout \_\_\_\_\_  
Alderman N. Ligino-Kubinski \_\_\_\_\_



APPROVED as to form: \_\_\_\_\_  
City Attorney

APPROVED this 17th day of October 2016.

\_\_\_\_\_  
Mayor Ruben Pineda

ATTEST:

\_\_\_\_\_  
City Clerk, Nancy M. Smith

PUBLISHED: \_\_\_\_\_



## CITY OF WEST CHICAGO

### INFRASTRUCTURE COMMITTEE AGENDA ITEM SUMMARY

**ITEM TITLE:**

Replacement of Water Treatment Plant Process Flow  
Monitoring and Metering Devices

**AGENDA ITEM NUMBER:** 4.C.**COMMITTEE AGENDA DATE:** October 6, 2016  
**COUNCIL AGENDA DATE:** October 17, 2016**STAFF REVIEW:** Joseph A. Munder, III, Water Treatment Plant  
Superintendent**SIGNATURE** **SIGNATURE** \_\_\_\_\_**APPROVED BY CITY ADMINISTRATOR:** Michael L. Guttman**ITEM SUMMARY:**

The City's Water Treatment Plant was constructed to utilize seven McCrometer full profile insertion type electromagnetic flow metering devices. These devices are now eleven years old, have begun to fail due to age, and must be replaced. In 2015 City staff replaced one failed device with a Micronics transit-time type flow metering device. The alternate technology was selected due to price and its capability of being installed without taking the Water Treatment Plant out of service. While the Micronics replacement device has performed within its standards, accurately measuring flows in the middle ranges, it has not met our needs for accuracy at either the high or low end of our flow spectrum. Flows at the Water Treatment Plant range from 1,900 gallons per minute to 3,400 gallons per minute. The flows recorded from the Water Treatment Plant's flow metering devices are compared to flows recorded at the various well pumping stations to document the volume of water withdrawn from the aquifers, the volume of water treated at the Water Treatment Plant, and potentially the volume of water lost in the transmission process. If the metering devices do not accurately record flows under all conditions, then the data cannot be accurately compared. The Illinois Environmental Protection Agency requires the City to report all flows recorded at the Water Treatment Plant and all Well Pumping Stations monthly, and is monitoring water loss.

An extensive review of the available technologies and applications was conducted and staff has determined that maintaining the original McCrometer full profile insertion type electromagnetic flow metering technology at the Water Treatment Plant is the best option. Full profile insertion type electromagnetic flow metering devices (commonly referred to as "Mag" meters) utilize Faraday's Law which states that when water (a conductor) moves through a magnetic field it produces voltage in direct proportion to the velocity of the conductor. Full profile insertion type magnetic flow meters utilize a probe that is inserted into a pipe, across the full diameter of the pipe, that uses a series of magnetic field sites evenly spaced along the probe to very accurately measure flow rates at all points across the pipe's diameter (see attached McCrometer brochure for additional information). Because water flow is almost never totally uniform across the full diameter of a pipe, full profile insertion type meters deliver a high degree of accuracy by taking multiple readings along the probe as water passes across it. Conversely, the Micronics transit-time type flow meter functions like a transducer, sending a sound wave through the water column to measure water velocity.

McCrometer's technology has the highest degree of accuracy available across a very wide range of flow rates and can be installed in the original installation points with virtually no modification. With technological advancements over the past eleven years, the manufacturer has improved the design to eliminate the most common source of failure which was water intrusion into the insertion probe. McCrometer now manufactures a stainless steel probe with magnetic field sites permanently bonded to the structure of the probe. McCrometer's technology also allows for the insertion probe to be removed and sent to McCrometer for annual certification.

Meter accuracy and quality are directly proportional to cost, with the McCrometer's full profile insertion type electromagnetic flow meters being one of the more expensive metering devices on the market. For example, a 20"

## CITY OF WEST CHICAGO

McCrometer meter will cost approximately \$8,000.00 versus a 20" Micronics transit-time flow meter which costs approximately \$ 4,000.00. Size of the meter also plays a factor in cost, smaller meters are more competitive and larger meters have a higher range of cost differential.

Staff is asking City Council to waive competitive bidding and authorize the purchase of seven (7) replacement flow monitoring and metering devices directly from the McCrometer of Hemet, California, for a total not to exceed amount of \$59,515.00 Adequate funds have been budgeted in the Water Fund (06-34-48-4430) to complete this purchase.

### **ACTIONS PROPOSED:**

That the West Chicago City Council waive competitive bidding and authorize the purchase of process flow metering devices from McCrometer of Hemet, California, for an amount not to exceed \$59,515.00.

### **COMMITTEE RECOMMENDATION:**





**FPI Mag<sup>®</sup>**  
**Full Profile Insertion**  
**Flow Meter**



The Only Hot Tap  
Full Profile Insertion  
Mag Meter

High Performance • Easy to Install



# Unbeatable Value in Cost of Installation and Ownership

Ideal for Capital or Maintenance Projects,  
Retrofits and Sites Never Before Metered

## MUNICIPAL WATER AND WASTEWATER

The FPI Mag Full Profile Insertion mag meter supports the following water and wastewater treatment applications:

### Water

- Distribution
- Effluent
- Pumping Stations
- UV Dosing
- Filter Balancing and Backwash
- Wells & Booster Stations

### Wastewater

- Effluent
- Recycle/Reclaim

The FPI Mag is ideal for chilled water in campus style facilities, hospitals, airports, hotels, casinos, etc.



## INDUSTRIAL FACILITIES

The FPI Mag is also suitable for a variety of industrial facilities: power plants (including cogeneration), paper mills, chemical & petrochemical plants, metals & mining, and food & beverage.

### Applications Include

- Cooling Water
- Fire Water
- Feed Water
- Raw Water
- Inlet to Surge Basin
- Effluent Wastewater



## Simple Installation

The insertion design of the FPI Mag allows for easy installation across a wide range of applications and pipe sizes. Hot Tap installation allows you to insert the meter without interrupting service, de-watering lines, cutting pipe or welding flanges.

## Lower Costs

Customers save 45%+ on installation and the total cost of ownership. The FPI Mag eliminates the need for heavy equipment and manpower necessary to support installation.

## Unmatched Accuracy

The FPI Mag's multi-electrode design and unique operating principle delivers accuracy unmatched by other insertion meters and rivals the performance of full-bore mag meters.

## Robust Construction

With no moving parts, there is nothing to wear or break. The sensor body is made from heavy-duty 316 stainless steel for maximum structural integrity. The sensor body is hermetically sealed and protected by NSF certified 3M fusion-bonded epoxy coating.

## Versatile

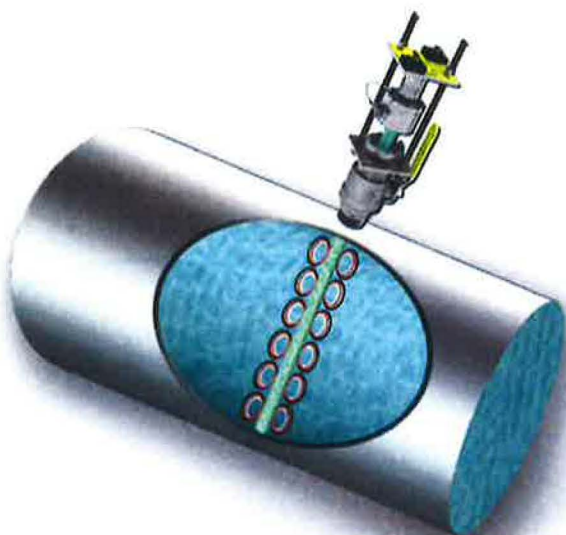
The FPI Mag is ideal for capital or maintenance projects, retrofits and sites never before metered. The unique combination of accuracy, ease of installation and total cost savings make the FPI Mag the perfect choice for a wide range of Municipal and Industrial applications.





- Simple Installation
- Lower Costs
- Unmatched Accuracy

## Principle of Operation



The FPI Mag operates based on Faraday's Law of Electromagnetic Induction: When water (a conductor) moves through a magnetic field, it produces a voltage that is directly proportional to the velocity of the conductor.

## How it Works ...

- Electromagnetic coils installed inside the entire length of the sensor produce magnetic fields
- Stainless steel electrode pairs installed on the outside of the entire sensor length collect the induced voltage caused by the flowing water
- The total voltage signal is then transmitted to the converter electronics where it is converted to an average flow velocity
- The converter then multiplies this average flow velocity by the pipe's cross-sectional area to create a volumetric flow rate

## Rivals the Performance of a Full-Bore Mag!

Multi-Electrode design delivers accurate full profile measurement with repeatable results

### PERFORMANCE SPECIFICATIONS

<b>Range:</b>	0.3 ft/s to 32 ft/s (0.1 m/s to 10 m/s)
<b>Accuracy:</b>	± 0.5% from 1 ft/s to 32 ft/s (0.3 m/s to 10 m/s) ± 1% from 0.3 ft/s to 1 ft/s (0.1 m/s to 0.3 m/s)
<b>Linearity:</b>	0.3% of reading
<b>Pipe Sizes:</b>	4" - 138" (100 mm to 3,500 mm)
<b>Materials:</b>	316 Stainless Steel Sensor Body, Insertion Hardware and Sensor Electrodes NSF Certified 3M Fusion-Bonded Epoxy Coating

### CERTIFICATIONS AND APPROVALS

Listed by CSA to 61010-1: Certified by CSA to UL 61010-1 & CSA C22.2 No. 61010-1-04



ISO 9001:2008 certified quality management system



To learn more and see a demonstration, go to:  
[www.mccrometer.com/fpimag](http://www.mccrometer.com/fpimag)

### CONVERTER

The FPI Mag utilizes our pre-programmed Converters\*:



- Curve-fitting algorithm to improve accuracy
- Dual 4-20 mA analog outputs\*
- RS485 port for easy connection to DCS\*
- HART\* • Modbus\* • Profibus\*
- 8 line graphical LCD display
- 3 key touch programming
- Rugged enclosure meets IP67

\*See data sheet for complete specs and order information

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For over 55 years, McCrometer has demonstrated an unyielding commitment to integrity which is reflected in our stringent flow meter calibration processes. Each flow meter is individually wet calibrated in one of our two world-class NIST traceable calibration facilities and delivered with a Certificate of Calibration.



Our Hemet, California factory boasts a robust Calibration Test Lab that enables production of the most accurate and precise flow instrumentation. The test facility utilizes three gravimetric systems and two volumetric systems providing accuracy and calibration tests of flow meters from 1/2 to 20-inch diameter, with flow rates up to 4,000 gpm.



Our large volume test facility is located in Porterville, California. This facility is one of the world's largest volumetric test facilities owned by a meter manufacturer, and it offers accuracy and calibration tests of flow meters from 3 to 72-inch diameter, with flow rates up to 60,000 gpm.

View the Demo:



## McCROMETER

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Represented by:

