



Memo

To: Trent Epperson, Deputy City Manager
From: Eric Hammond, Assistant Director of Public Works
CC: Clarence Wittwer, Director of Public Works
Nancy Massey, Water Billing & Collections Manager
John Hines, Distribution & Collections Superintendent
Date: March 12, 2021
Re: Meter Testing Update and Background

Executive Summary

On February 2, 2021 staff published a memorandum providing information related to several components of the meter testing program. Information within that memorandum included testing parameters for water meter accuracy, meter testing process and frequency, water consumption measurement, and meter test results. *The intent of this memo is to expand on the Feb. 2 by sharing additional highlights and provide an update on meter test results that have been conducted since the previous communication.*

Highlights

- There have been five more meters tested since publication of the Meter Testing Memo dated February 2, 2021. *All five meters passed the testing process.*
- Upon a second review of the meter testing data shared within the Feb. 2 testing memorandum, it was identified that a second meter listed in the meter test log, tested outside of required parameters. The second meter was not discussed in the body of the memo. Rather the memo (link below) indicated only one Badger water meter failed its accuracy test since the meter change out process commenced. This statement is found to be inaccurate, as two out of 36 meters *failed* the meter testing process and were replaced under warranty. Both meters tested *underread* (-1.6% of 100) due to the meter measuring less than acceptable AWWA actual usage.
- Staff met with Badger and Southern Flowmeter, our third-party meter testing contractor, in January 2021 to review the testing procedures and mobile lab and equipment. Southern Flowmeter presented proprietary pictures of their testing equipment in the mobile lab.
- Public Works and Utility Billing collaborated to update the standard operating procedure for small meter testing, 5/8"- 2" water meters. The updated SOP allows resolution for a small meter customer's inquiry as to the accuracy of the meter. In addition, it is the intent of the Public Works Department to develop and adopt a small (5/8" – 2") meter testing policy which allows for the annual testing of a representative sample, estimated 5% - 10%, of each meter size. As previously communicated in the Feb 2 memo, the current testing process for larger (3" – 8") meters is conducted on an annual basis and will remain as such moving forward.
- **The proposed meter testing ordinance**, Section 30-46 provides for an accuracy test of the customer's meter by an independent meter testing company contracted by the City. The results are based on the AWWA standards by meter size and type, with accuracy results +/- 1.5% of 100. The assessment of the meter test costs is listed in the budget schedule by meter size.

- During the current transition period, **escalated inquiries to CMO have temporarily not been assessed a meter testing fee.** After AMI is fully operational, fees will return to be assessed to meter tests. As per ordinance [Section 30-46](#), the meter testing fees are charged based on meter size. The fees, assessed to the customer's account, are to offset the cost of the third-party independent meter testing company performing the test when the meter is found to be properly functioning. UB Manager has the option to override fees contingent upon the inquiry results. Current meter testing fees are located in the [Fee Schedule](#) listed in the City's Budget.
- **Engineering, Utility Billing and Public Works staff are working with the Communications Department to develop a webpage dedicated to water meters.** The intent of this webpage is to elevate the base level knowledge of water meters, water measurement and water testing, while also providing a singular location for meter information traditionally hosted by the Utility Billing Department or Meter Services Division of Public Works.

Link to Relevant Memos/Documents

- [Meter Test Log with Map 3.12.2021](#)
- [Utility Billing Status Update - Meter Testing 2.8.2021](#)
- [Small Meter \(5/8" - 2"\) Testing SOP](#)

Meter Testing Log
3-12-2021

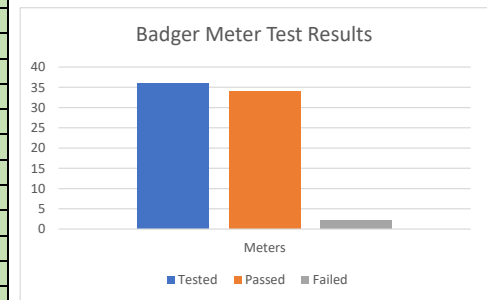
METER TYPE	Work Order Code	Test Date	Meter Size	AWWA TEST ALLOWANCES			Weighted Results
				Minimum Rate	Intermediate Rate	Maximum Rate	
				95%-105%	98.5%-101.5%	98.5%-101.5%	
GPM TEST FLOW RATE / RESULT							
NEPTUNE	TEST METER	2/3/2020	5/8	101%	101%	100%	100.80%
BADGER	TEST METER	3/31/2020	5/8	99.60%	98%	97.85%	***98.3%
NEPTUNE	TEST METER	4/20/2020	1	94.25%	100.25%	97.14%	98.50%
NEPTUNE	TEST METER	4/27/2020	6	101.40%	98.30%	100.70%	*
BADGER	TEST METER	7/14/2020	2	100.20%	101.30%	100.20%	100.90%
BADGER	TEST METER	7/14/2020	5/8	101.10%	99.80%	97.85%	99.70%
BADGER	TEST METER	8/14/2020	5/8	97.70%	97.70%	98%	***97.8%
BADGER	TEST METER	8/28/2020	1	99%	98.50%	99.50%	98.80%
BADGER	TEST METER	9/13/2020	5/8	99.50%	99.20%	98.41%	99.10%
BADGER	TEST METER	9/25/2020	5/8	100.60%	99.20%	97.63%	99.20%
BADGER	TEST METER	10/21/2020	5/8	101.90%	99.80%	101.20%	100.40%
BADGER	TEST METER	10/21/2020	5/8	100.90%	99.30%	98.70%	99.50%
BADGER	TEST METER	10/21/2020	5/8	102%	98.20%	99.30%	99.10%
BADGER	TEST METER	11/15/2020	5/8	98.90%	100.80%	98.70%	100.10%
BADGER	TEST METER	11/23/2020	5/8	99.40%	99.40%	99.80%	99.50%
BADGER	TEST METER	11/23/2020	1	98.50%	99.80%	99.60%	99.40%
BADGER	TEST METER (b)	12/1/2020	5/8	93.00%	97.00%	96.20%	**96.1%
BADGER	TEST METER (c)	12/1/2020	5/8	93.30%	97%	96.10%	**96.3%
BADGER	TEST METER (a)	12/6/2020	1	94.60%	96.80%	98.80%	**96.7%
BADGER	TEST METER (d)	12/6/2020	5/8	92.60%	98.20%	98.20%	**97.2%
BADGER	RETEST METER (a)	1/8/2021	1	99.90%	99%	100%	99.40%
BADGER	RETEST METER (b)	1/8/2021	5/8	99.90%	100%	100%	100%
BADGER	RETEST METER (c)	1/8/2021	5/8	100%	99.30%	100%	99.60%
BADGER	RETEST METER (d)	1/8/2021	5/8	99.90%	100.20%	100%	100.10%
BADGER	TEST METER	1/8/2021	1	99.90%	99.80%	100%	99.90%
BADGER	TEST METER	1/8/2021	1	99.90%	99.70%	99.90%	99.80%
BADGER	TEST METER	1/8/2021	1	99%	100%	100%	99.80%
BADGER	TEST METER	1/8/2021	2	100%	99.80%	100%	99.90%
BADGER	TEST METER	1/8/2021	5/8	99.80%	100.10%	100%	100%
BADGER	TEST METER	1/8/2021	5/8	99.80%	99.60%	99%	99.50%
BADGER	TEST METER	1/8/2021	5/8	99.80%	99%	99%	99.20%
BADGER	TEST METER	1/8/2021	5/8	99.80%	99%	100.60%	99.40%
BADGER	TEST METER	1/8/2021	5/8	100%	100%	99.90%	100%
BADGER	TEST METER	1/8/2021	5/8	99.80%	99.80%	99%	99.70%
BADGER	TEST METER	1/8/2021	5/8	100%	100.10%	100.40%	100.10%
BADGER	TEST METER	1/8/2021	5/8	99.80%	99.70%	99.90%	99.80%
BADGER	TEST METER	1/13/2021	5/8	99.80%	99.90%	99.20%	99.80%
BADGER	TEST METER	1/22/2021	5/8	98.70%	99.30%	99.10%	99.20%
BADGER	TEST METER	2/5/2021	5/8	100.20%	99.80%	100.00%	99.90%
BADGER	TEST METER	2/2/2021	5/8	100.90%	100.80%	100.40%	100.70%
BADGER	TEST METER	2/9/2021	5/8	98.70%	99.50%	99.50%	99.00%
BADGER	TEST METER	2/9/2021	5/8	101.10%	100.40%	100.00%	100.50%
BADGER	TEST METER	2/9/2021	5/8	100.80%	100.60%	100.00%	100.50%

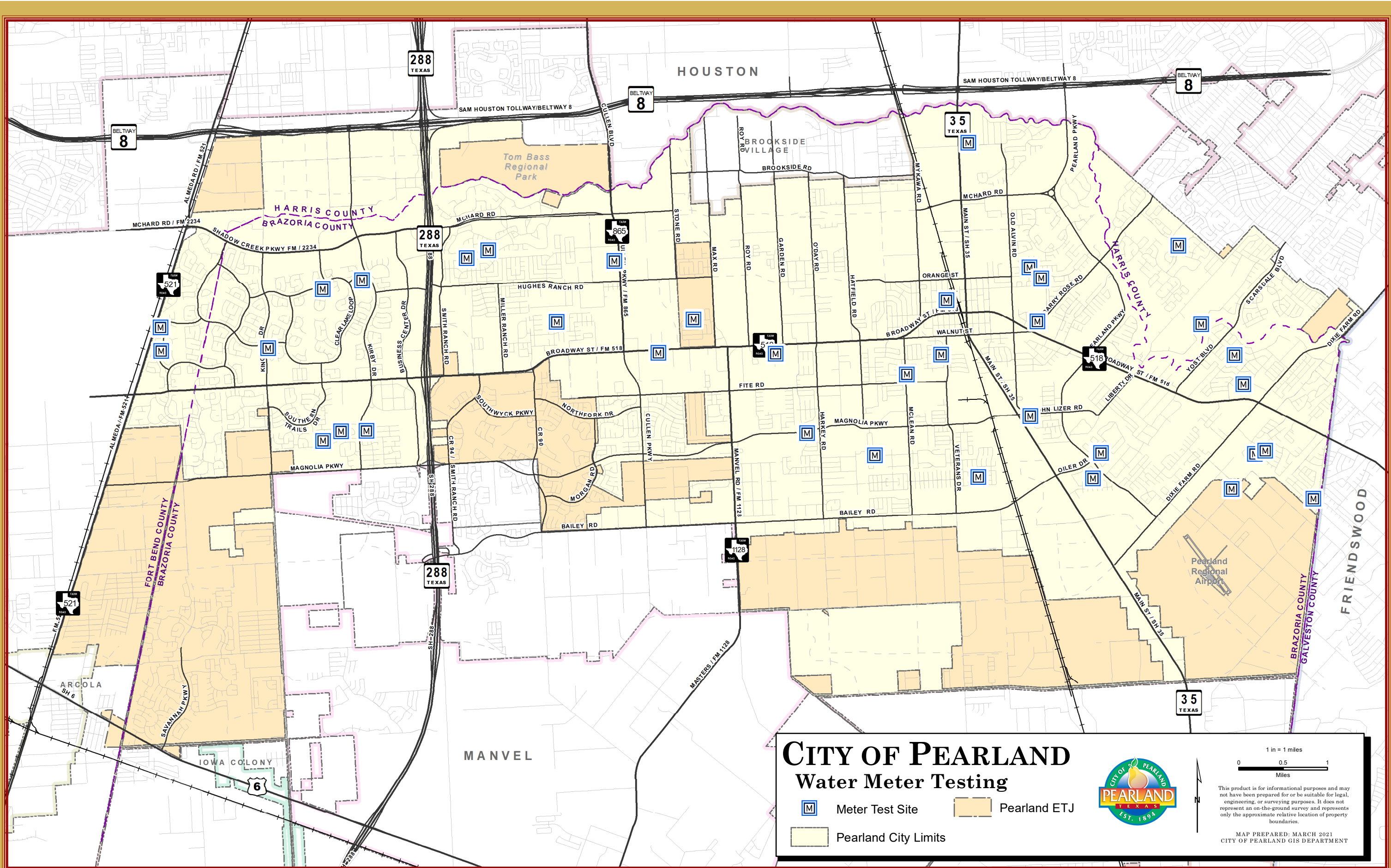
AWWA Standard by Meter Size			
NEPTUNE			
Mtr Size	Low	Mid	High
5/8	0.25	2	15
1	0.75	4	40
2	2	15	100
6			1000

AWWA Standard by Meter Size			
BADGER FLOW			
Mtr Size	Low	Mid	High
5/8	0.13	0.4	15
1	0.3	1.5	40
2	1	5	100

* NO WEIGHTED ACCURACY PROVIDED
 ** METER WAS RETESTED
 *** METER WAS REPLACED
 (a),(b),(c) & (d) denote meter test and subsequent retest

Testing Stats			
Badger Meter			
	Tested	Passed	Failed
Meters	36	34	2

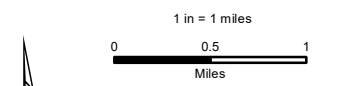




CITY OF PEARLAND

Water Meter Testing

- M Meter Test Site
- Pearland ETJ
- Pearland City Limits



This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

MAP PREPARED: MARCH 2021
CITY OF PEARLAND GIS DEPARTMENT