

TOWN OF CARMEL

CARMEL WATER DISTRICTS

1,2,3,4,5,6,7,8,9,10,12,13 and 14

AUTOMATIC METER INFRASTRUCTURE (AMI)

AND WATER METERS PROJECT

May 2017

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Town Engineer

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ATTACHEMENTS

- February 16, 2017 Town of Carmel Town Board Resolution Authorizing Advertising for Bids
- Figure 1 - Location Plan

1.0 AUTHORIZATION

The Town Board of the Town of Carmel ("Town") has authorized the Town Engineering Department to prepare a Map, Plan and Report (MPR) for the installation of automatic meter infrastructure (AMI) and water meters for Carmel Water Districts 1,2,3,4,5,6,7,8,9,10,12,13 and 14. A copy of the authorizing resolution is provided as an attachment.

Accordingly, this Map and Plan has been prepared in accordance with New York State Town Law, Article 12, Section 202-b, "Increase or Improvements of Facilities".

2.0 BACKGROUND

The Town is looking for ways to improve service to its customers. This new system will benefit the various water districts by:

- Reducing the need for Town employees to access property to read the meter resulted in lower labor costs.
- Eliminate estimated billings while ensuring accurate meter readings.
- Increasing the Town's efforts to conserve water while providing potential leak notification and other alerts to meter malfunctions.

The Town is implementing a water meter upgrade program by replacing the old meter reading system with new water meters and meter interface units at every property served by the Town of Carmel. The new meter program will allow the Town to implement a more efficient meter reading system, thereby reducing on-site labor requirements and other associated operational costs.

This project will assist with unaccounted for water usage, provide tools for water conservation, re-deploy staff to other needs of the Department and replace existing meters beyond their recommended service life.

3.0 PROPOSED IMPROVEMENTS

3.1 Project Description and Scope

The meter reading system will be upgraded to an AMI (Advanced Metering Infrastructure) system. The advantages to having an AMI system are as follows:

- instantaneous readings;
- leak detection;
- reverse flow tampering notifications;
- proactive maintenance; and
- stopped/stuck meter notification.

These new features will provide the Town and its customers the ability to avoid billing disputes with greatly improved system awareness.

An automated reading system with a new meter will be installed to replace existing water meters in every home and business in all thirteen (13) water districts in the Town of Carmel. Using cellular technology similar to systems used by other utilities the meter will transmit daily data (equivalent to a single line text message) back to the water department for its use. The data will contain water consumption and notifications of any issues with the meter.

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Work shall consist of furnishing and installing approximately 4,600 meters in the various districts as shown in Table 1:

Table 1 Meters per District	
Water District	Number of meters
1	80
2	2,479
3	510
4	172
5	53
6	106
7	119
8	402
9	160
10	119
12	118
13	81
14	154
Total	4,553

4.0 CAPITAL PROJECT COST

As shown in Table 2, the estimated project cost for the proposed project is approximately \$3,201,300.00. The Town will publicly bid for the purchase and installation of the proposed improvements, and retain the services of an independent contractor to accomplish the meter installations.

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Table 2 Estimated Capital Project Costs		
Water District	Number of meters	Cost
1	80	\$60,000.00
2	2479	\$1,820,000.00
3	510	\$375,000.00
4	172	\$126,000.00
5	53	\$40,000.00
6	106	\$80,000.00
7	119	\$88,000.00
8	402	\$295,000.00
9	160	\$118,000.00
10	119	\$88,000.00
12	118	\$87,000.00
13	81	\$60,000.00
14	154	\$113,000.00

5.0 PROJECT FINANCING AND USER CHARGES

The costs of financing this project will be assessed to the properties in various water districts. Water District Capital taxes are calculated either by Assessed Value or by Assessed Units. The Current Existing Debt per district is outlined in Table 3.

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Table 3 Current Existing Debt		
Water District	Outstanding Debt	Time to be retired (years)
1	\$0	
2	\$595,705.00	16
3	\$80,953.00	5
4	\$212,564.00	10
5	\$67,615.00	16
6	\$307,070.00	16
7	\$101,688.00	16
8	\$3,162,833.00	22
9	\$384,147.00	16
10	\$151,015.00	5
12	\$70,958.00	16
13	\$921,582.00	15
14	\$222,479.00	16

It is assumed that purchase and installation of the meter will be financed with either a 5-year bond anticipation note at an interest rate of between 0.95% - 1.80% or a 10-year bond at an interest rate of between 2.00% - 2.50%. The annual debt service costs per district and per customer are outlined below in Table 4.

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Table 4 – Estimated Annual Debt Service Costs¹ 5-year BAN/10-year Bond

Water District	Estimated District-wide Annual Repayment Amount	Estimated Debt Service per Customer
5 years		
1	\$ 12,704	\$ 158.81
2	\$ 383,603	\$ 154.74
3	\$ 78,990	\$ 154.88
4	\$ 26,619	\$ 154.76
5	\$ 8,426	\$ 158.97
6	\$ 16,868	\$ 159.14
7	\$ 18,549	\$ 155.87
8	\$ 62,178	\$ 154.67
9	\$ 24,868	\$ 155.43
10	\$ 18,549	\$ 155.87
12	\$ 18,339	\$ 155.41
13	\$ 12,638	\$ 156.03
14	\$ 23,815	\$ 154.64
10 years		
1	\$ 6,796	\$ 84.95
2	\$ 206,176	\$ 83.17
3	\$ 42,496	\$ 83.33
4	\$ 14,435	\$ 83.92
5	\$ 4,513	\$ 85.15
6	\$ 9,073	\$ 85.60
7	\$ 9,972	\$ 83.80
8	\$ 33,340	\$ 82.94
9	\$ 13,374	\$ 83.59
10	\$ 9,972	\$ 83.80
12	\$ 9,865	\$ 83.60
13	\$ 6,796	\$ 83.90
14	\$ 12,798	\$ 83.10

¹ Based upon a \$3,350,000.00 project capital cost

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MAP, PLAN & REPORT

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Table 5 – Total Estimated Annual Debt Service Costs for Average Customer¹

Repayment Term	Existing Annual Debt Service Costs per Customer	Annual Debt Service Costs of project per Customer	Total annual Debt Service Costs, Combined per Customer
5 years			
1	\$ 74.36	\$ 158.81	\$ 233.17
2	\$ 89.00	\$ 154.74	\$ 180.76
3	\$ 45.37	\$ 154.88	\$ 200.25
4	\$ 195.68	\$ 154.76	\$ 349.44
5	\$ 105.66	\$ 158.97	\$ 264.63
6	\$ 198.58	\$ 159.14	\$ 357.72
7	\$ 105.21	\$ 155.87	\$ 261.08
8	\$ 597.01	\$ 154.67	\$ 751.68
9	\$ 309.81	\$ 155.43	\$ 465.24
10	\$ 270.17	\$ 155.87	\$ 426.04
12	\$ 35.42	\$ 155.41	\$ 190.83
13	\$ 910.49	\$ 156.03	\$1,066.52
14	\$ 99.61	\$ 154.64	\$ 254.25
10 years			
1	\$ 74.36	\$ 84.95	\$ 159.31
2	\$ 89.00	\$ 83.17	\$ 172.17
3	\$ 45.37	\$ 83.33	\$ 128.70
4	\$ 195.68	\$ 83.92	\$ 278.60
5	\$ 105.66	\$ 85.15	\$ 190.81
6	\$ 198.58	\$ 85.60	\$ 284.18
7	\$ 105.21	\$ 83.80	\$ 189.01
8	\$ 597.01	\$ 82.94	\$ 679.95
9	\$ 309.81	\$ 83.59	\$ 393.40
10	\$ 270.17	\$ 83.80	\$ 353.97
12	\$ 35.42	\$ 83.60	\$ 119.02
13	\$ 910.49	\$ 83.90	\$ 994.39
14	\$ 99.61	\$ 83.10	\$ 182.71
	¹ Based upon a \$3,350,000 project capital cost		

Table 5 above provides the total estimated annual water district capital costs borne by the typical water district customer.

6.0 RECOMMENDATIONS AND CONCLUSIONS

It is recommended that the information presented in this Map, Plan and Report be presented to the residents within the service districts during a public hearing. The public hearing should be scheduled once the Town Board has accepted this report in accordance with Article 12 of Town Law. Should the Town Board decide following the public hearing that the project is in the public interest, the Board should pass a resolution authorizing this project.

Respectfully submitted,



BY:

Richard J. Franzetti, PE

DATE: May 2017

**RESOLUTION AUTHORIZING ADVERTISING FOR BIDS
WATER METERS AND AUTOMATED METER INFRASTRUCTURE
ALL TOWN OF CARMEL WATER DISTRICTS**

RESOLVED that, pursuant to the request of Town of Carmel Town Engineer Richard J. Franzetti, P.E., the Town Board of the Town of Carmel, acting as Commissioners of the thirteen individual water districts established within the Town of Carmel, hereby authorizes development of necessary plans and specifications to solicit bids for supply and installation of automated water meter infrastructure for said water districts; and

BE IT FURTHER RESOLVED, that upon the completion of said plans and specifications that Town Clerk Ann Spofford is authorized to advertise for bids for the provision and installation of such automated water meter infrastructure; and

BE IT FURTHER RESOLVED that The Town Engineer is to furnish detailed specifications for the above to the Town Clerk Ann Spofford to be used in conjunction with the Town's general bid conditions and specifications.

Resolution

Offered by: Councilman Schneider
Seconded by: Councilman Lupinacci

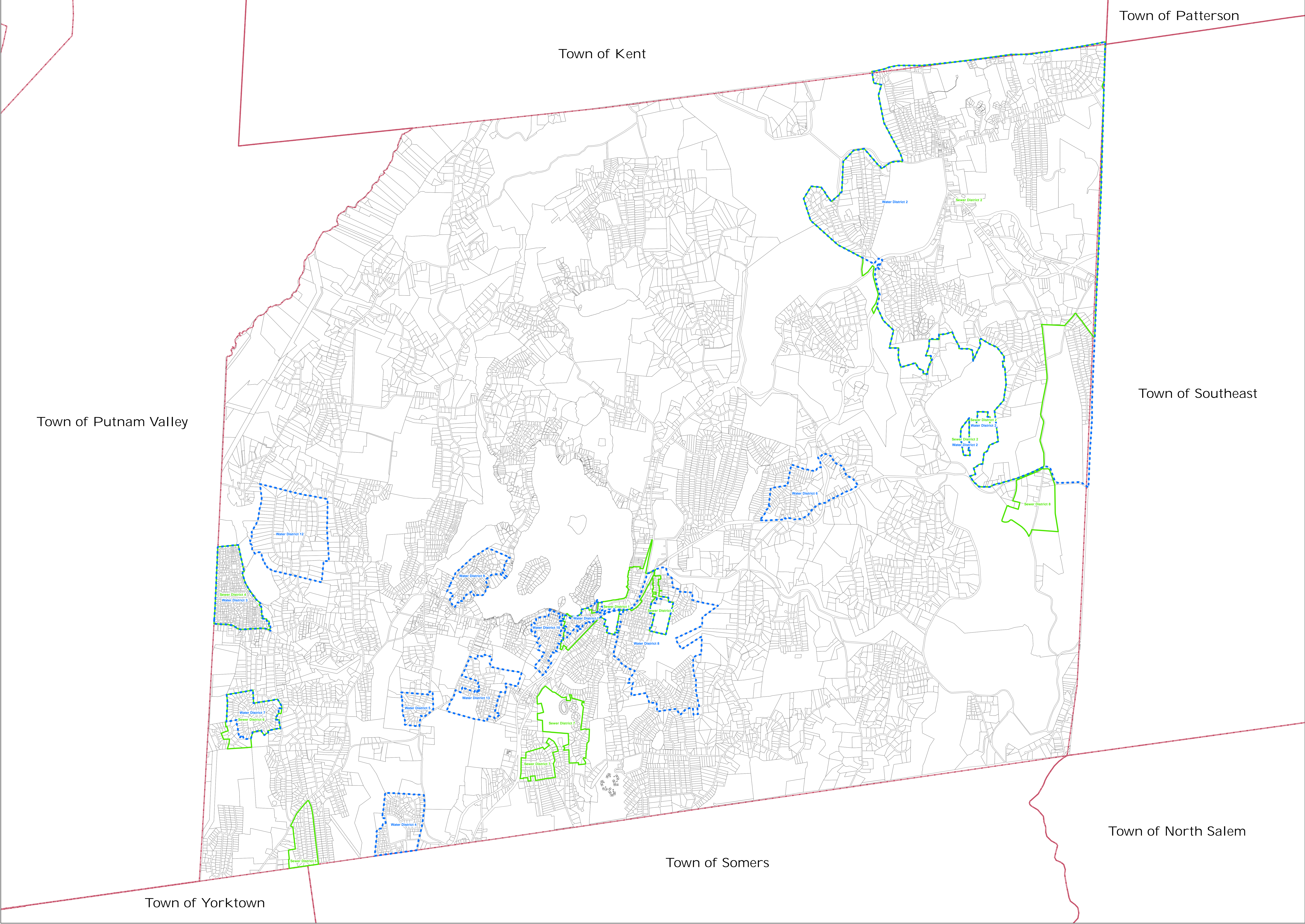
<u>Roll Call Vote</u>	<u>YES</u>	<u>NO</u>
Jonathan Schneider	<u>X</u>	<u> </u>
John Lupinacci	<u>X</u>	<u> </u>
Suzanne McDonough	<u>X</u>	<u> </u>
Frank Lombardi	<u>X</u>	<u> </u>
Kenneth Schmitt	<u>X</u>	<u> </u>

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I, Phyllis Bourges, Deputy Town Clerk of the Town of Carmel, Putnam County, New York, do hereby certify that the foregoing resolution is a true and exact copy of the original on file in my office which was adopted by the Town Board of said Town at a duly called and held meeting on the 15th day of February, 2017; and of the whole thereof.

Dated: February 16, 2017


Phyllis Bourges, Deputy Town Clerk



Area of Interest

- Water District Boundaries
- Sewer District Boundaries
- Municipal Boundaries
- Tax Parcel Boundaries

Town of Carmel

Sewer and Water Districts

Town of Carmel
Sewer and Water Districts

This map is for representational purposes only. Not to be used for engineering or surveying purposes.
Data Sources: Putnam County GIS Department, New York State Department of State, New York State Department of Transportation, Aerial Photo Aerialmont for 2001
Map produced by: Town of Carmel GIS Department / Last Revised: June 27, 2005, JMH

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