



**Naperville**

# **Water AMI/AMR Business Case 2019**



## Service Level Expectations:



## Mission & End Policies adopted by the City Council

- *Provision of local government services that promote environmental sustainability.*
- *Use of technology to achieve high performing government operations.*
- *Use of technology to achieve greater citizen convenience, enhanced engagement, and communication.*



## Current State:



- **Manual Meter Reading Contract available through 2021**
  - *Not sustainable for the long term*
    - *Fewer communities using contracted meter reading service delivery model*
  - *High estimated bill volume*
  - *Doesn't meet City service level expectations*
- **City Council authorized West Monroe Partners to develop a Business Case for AMI/AMR options.**
  - *PUAB/FAB Advisory Boards have reviewed and provided recommendations to City Council*



- AMI/AMR technology has become a standard method for water utilities throughout the region.

|               |   |   |
|---------------|---|---|
| <b>AMI</b>    | Aurora<br>Downers Grove<br>Elmhurst<br>Evanston<br>Joliet<br>Geneva | Glen Ellyn<br>Glenview<br>Lombard<br>Orland Park<br>Tinley Park |
| <b>AMR</b>    | Batavia<br>Carol Stream<br>Plainfield                               | Wheaton<br>Winfield   |
| <b>Manual</b> | Lisle   | Woodridge   |

# AMI Customer Benefits and Sustainability

1

## IMPROVED CUSTOMER SERVICE

Transitioning to AMI will reduce the volume of estimated bills, and help Naperville provide customers with proactive leak notifications, consumption alerts, and better usage data in near real-time.

2

## IMPROVED SUSTAINABILITY IN OPERATIONS

Fewer truck rolls – attributed to AMI deployment – will reduce Naperville’s greenhouse gas emissions. 95% of mileage (or approximately 86 tons CO<sub>2</sub>e over the life of the program) associated with metering reading activity is expected to be eliminated via AMI.

3

## IMPROVED CUSTOMER LEAK DETECTION

Hourly interval data from water meters, analytics, and a customer portal/mobile application could proactively identify leaks and notify account holders – reducing the risk of water waste & catastrophic damage.

4

## IMPROVED CONSERVATION OPPORTUNITIES

Hourly interval data can be used for empowering customers to make their own choices regarding consumption reduction and resource conservation.

5

## IMPROVED SAFETY – FOR STAFF & CUSTOMERS

Transitioning to AMI will reduce safety risks that meter readers encounter in the field. Additionally, reduction in driving miles associated with AMI will reduce the likelihood of car accidents – making roads safer for both customers and Naperville staff.



## Business Case Financial Scenarios



### Five scenarios were evaluated:

1. Baseline scenario - Manual reading utilizing in-house staff
2. AMI – Utilize existing Elster Network (Electric Department Existing System)
3. AMI – Point-to-Multipoint Low network
4. AMI – Point-to-Multipoint High network
5. AMR

# Comparative Scenarios

20-year battery life, 1-year deployment



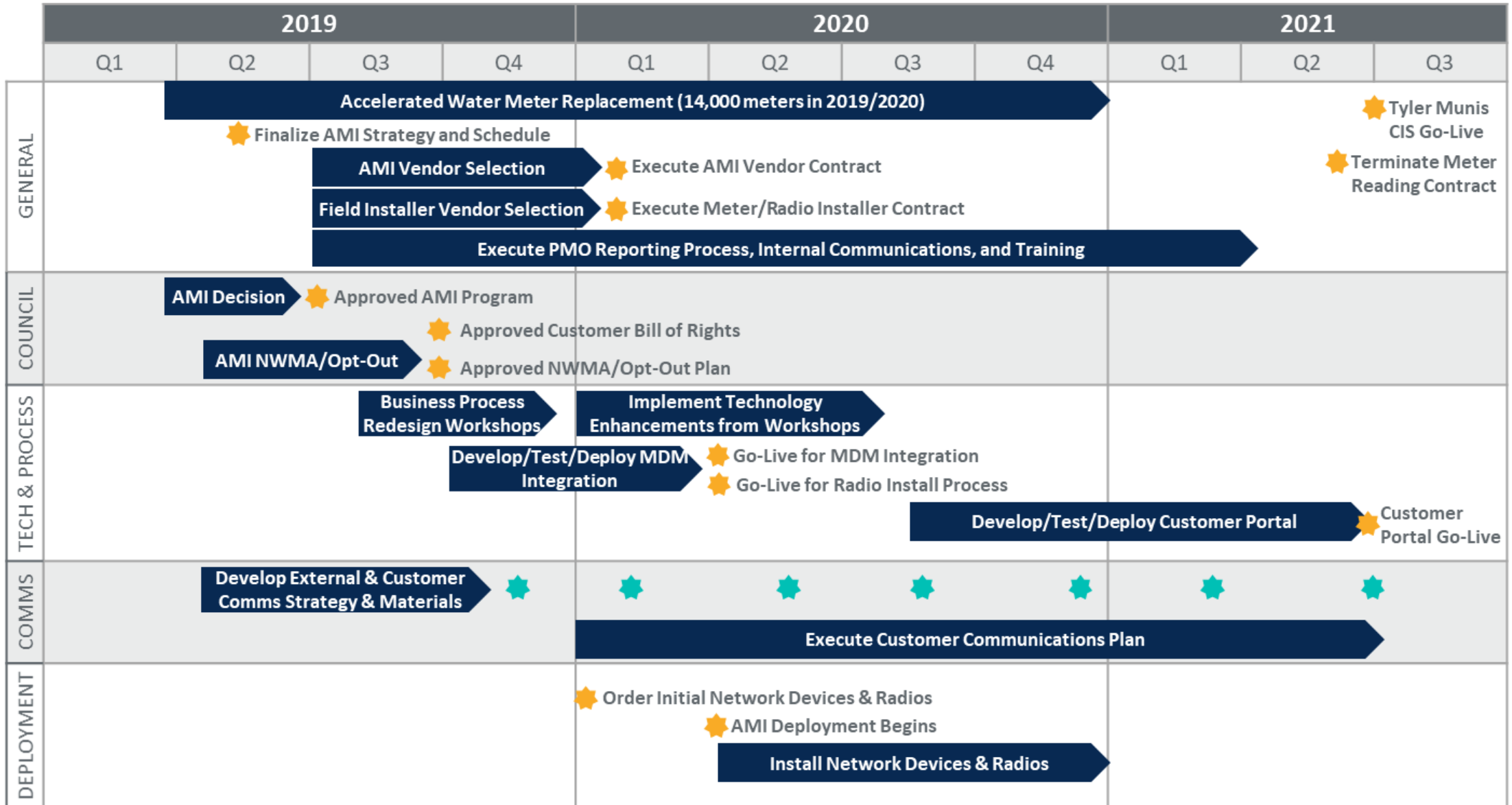
Denotes most financially effective AMI approach



|                                  | Baseline<br>(Manual) | AMI – Naperville<br>Network | AMI – PtMP<br>(Low) | AMI – PtMP<br>(High) | AMR – Mobile  |
|----------------------------------|----------------------|-----------------------------|---------------------|----------------------|---------------|
| <b>Total 20-Year</b>             |                      |                             |                     |                      |               |
| <b>Costs</b>                     | -\$20,209,291        | -\$18,701,416               | -\$25,505,116       | -\$26,428,607        | -\$16,457,029 |
| <b>Savings</b>                   | N/A                  | \$22,017,456                | \$22,017,456        | \$22,017,456         | \$19,500,940  |
| <b>NET Costs / Savings (-/+)</b> | N/A                  | \$3,316,040                 | -\$3,487,660        | -\$4,411,151         | \$3,043,911   |
| <b>Capital Costs</b>             |                      |                             |                     |                      |               |
| <b>2020</b>                      | -\$0                 | -\$7,741,563                | -\$8,498,911        | -\$9,700,322         | -\$6,521,965  |
| <b>2021</b>                      | -\$266,114           | -\$81,945                   | -\$93,439           | -\$118,288           | -\$66,099     |
| <b>Total Deployment Capital</b>  | -\$266,114           | -\$7,823,508                | -\$8,592,350        | -\$9,818,610         | -\$6,588,064  |
| <b>O&amp;M Costs</b>             |                      |                             |                     |                      |               |
| <b>2020</b>                      | -\$393,062           | -198,391                    | -\$281,467          | -\$249,452           | -\$102,765    |
| <b>2021</b>                      | -\$1,279,918         | -\$244,330                  | -\$398,609          | -\$365,150           | -\$251,456    |
| <b>Total Deployment O&amp;M</b>  | -\$1,672,980         | -\$442,721                  | -\$680,076          | -\$614,602           | -\$354,221    |
| <b>Total Deployment Costs</b>    | -\$1,939,094         | -\$8,266,229                | -\$9,272,425        | -\$10,433,212        | -\$6,942,285  |

# The AMI program would take approximately 24 months to complete after receiving Council approval

LEGEND ACTIVITY MILESTONE STAKEHOLDER UPDATE



*This is the most optimistic implementation plan, optimized by leveraging the existing electric AMI network's infrastructural footprint*



# Funding Scenarios – Preliminary Estimated Rate Impact

| Baseline (Manual)              |                       |
|--------------------------------|-----------------------|
| Rate Impact                    | \$2.82/\$1.33-\$1.52* |
| AMI/AMR                        |                       |
| Phosphorus<br>(8-Year payback) | \$2.30 - \$3.30       |
| Borrow Internal<br>(20-Years)  | \$1.25 - \$1.90       |
| Borrow External<br>(20-Years)  | \$1.50 - \$2.20       |

- All options for future meter reading will result in rate increase
- Business Case options range from \$6.5M to \$10M
- Manual meter reading scenario anticipates an increase in rates of \$2.82 in year one reducing to \$1.33-\$1.52 in remaining years
- Borrowing scenarios anticipate a one time rate adjustment that remains in place for the term of the borrowing

\*Monthly rate impact based off of average monthly bill of \$75.70

# Recommendation/Next Steps



- PUAB recommended AMI & funding scenario with lowest impact for ratepayers
- FAB recommended funding to use cash on hand within the Utility fund first, cash on hand within the City second, and consider borrowing from the outside third
- Recommend issuance of a RFP (AMI) from vendors – 6/18/19
- Update Customer Bill of Rights & Water Customer opt-out program – 3<sup>rd</sup> Quarter 2019
- Electric Customer Portal – End of 2019
- Deployment of automated meter reading will allow for integration with the Tyler Utility Billing module – July 2021