

# AMI Vendor Contracting Overview

Brownsville Public Utilities Board



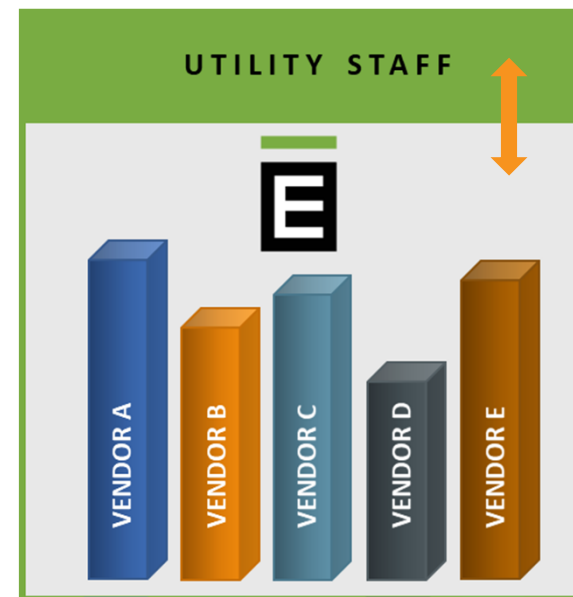
October 9, 2023

# E Source Role

*100% vendor-neutral, providing AMI project management, advisory and vendor liaison support on your behalf*



*We work on your behalf to bridge the gap in services*



# E Source Task and Deliverables

Task Name	Deliverables	
<b>Task 1 - Vendor Contract Negotiations</b>	<ul style="list-style-type: none"> <li>Customized system/solution acceptance criteria</li> <li>Vendor(s) scope(s) of work with firm pricing</li> </ul>	<ul style="list-style-type: none"> <li>Presentation to management or governing body</li> </ul>
<b>Task 2 - Project and Vendor Management</b>	<ul style="list-style-type: none"> <li>Project Charter</li> <li>Project Execution Plan</li> <li>Project Budget</li> <li>Periodic Status Reports</li> </ul>	<ul style="list-style-type: none"> <li>Meeting Agendas and Minutes</li> <li>Updated AMI Implementation Schedule</li> <li>End of Project Close Out/Summary Report</li> </ul>
<b>Task 3 - Solution Architecture</b>	<ul style="list-style-type: none"> <li>As-is and to-be system</li> </ul>	
<b>Task 4 - Project Engineering</b>	<ul style="list-style-type: none"> <li>Requirements Management Plan (RMP)</li> </ul>	<ul style="list-style-type: none"> <li>Initial Requirements Traceability Matrix (RTM)</li> </ul>
<b>Task 5 - Testing Support</b>	<ul style="list-style-type: none"> <li>AMI Overall Test Strategy</li> <li>Test Plans for all BPUB-owned Tests</li> </ul>	<ul style="list-style-type: none"> <li>Reviewed procedures, results with interpretation, and recommendations documentation</li> <li>Final Requirements Traceability Matrix</li> </ul>
<b>Task 6 - Data Management and Quality Assurance</b>	<ul style="list-style-type: none"> <li>Data Management Plan</li> </ul>	<ul style="list-style-type: none"> <li>Training materials</li> </ul>
<b>Task 7 - Business Process Design</b>	<ul style="list-style-type: none"> <li>Finalized current state process diagrams</li> <li>AMI Operational Staffing Plan</li> </ul>	<ul style="list-style-type: none"> <li>Draft Policies</li> <li>Draft future state process diagrams</li> </ul>
<b>Task 8 - Organizational Change Management</b>	<ul style="list-style-type: none"> <li>Stakeholder Analysis</li> <li>Sponsors Activities Guide</li> <li>Vision &amp; Elevator Speech</li> </ul>	<ul style="list-style-type: none"> <li>Content for internal stakeholder communications</li> <li>Change Management Plan</li> </ul>
<b>Task 9 - Customer Engagement</b>	<ul style="list-style-type: none"> <li>Support development of a Customer Engagement Plan</li> </ul>	<ul style="list-style-type: none"> <li>Content for customer communications</li> </ul>
<b>Task 10 - Meter Deployment Quality Assurance</b>	<ul style="list-style-type: none"> <li>Support documentation in meter vendor software</li> </ul>	<ul style="list-style-type: none"> <li>Inspection reports on verification of vendor work</li> </ul>
<b>Task 11 - Fixed Network Deployment Support</b>	<ul style="list-style-type: none"> <li>Site development plan for each data collector site</li> </ul>	

# What is AMI?



Advanced Metering Infrastructure (AMI) is an integration of many technologies that provide an intelligent connection between BPUB and their customers



Infrastructure includes communication networks between the meters and BPUB; meter readings and other data are transmitted over the network and stored in a meter data management system (MDMS)



The MDMS will send reads to the billing system and provide useful operational reports for BPUB

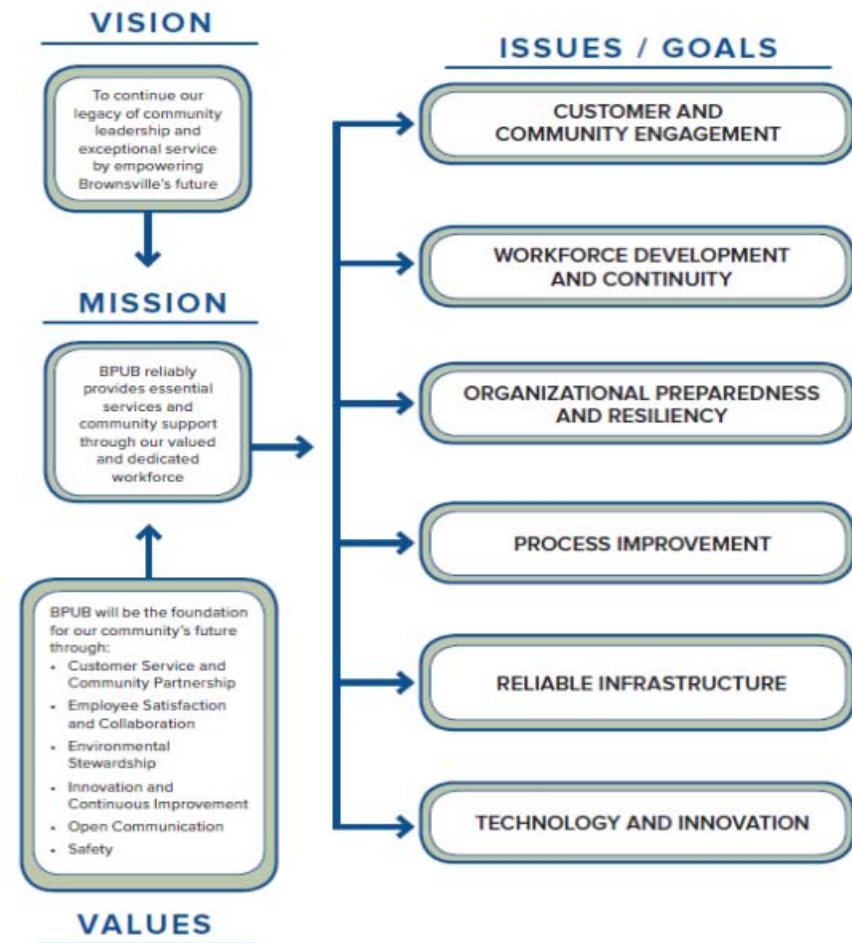


As part of the AMI project, new electric meters, water meters, and communication devices will be installed by a contractor



# BPUB Strategic Plan

- AMI will enable BPUB to:
  - Engage our customers via phone, text or email with near real time information on their account, electric and water consumption
  - Proactively monitor systems to reduce losses
  - Know when, where and the scope of outages
  - Respond faster, reduce truck rolls, and send the proper crews the first time



# Vendor Contracting

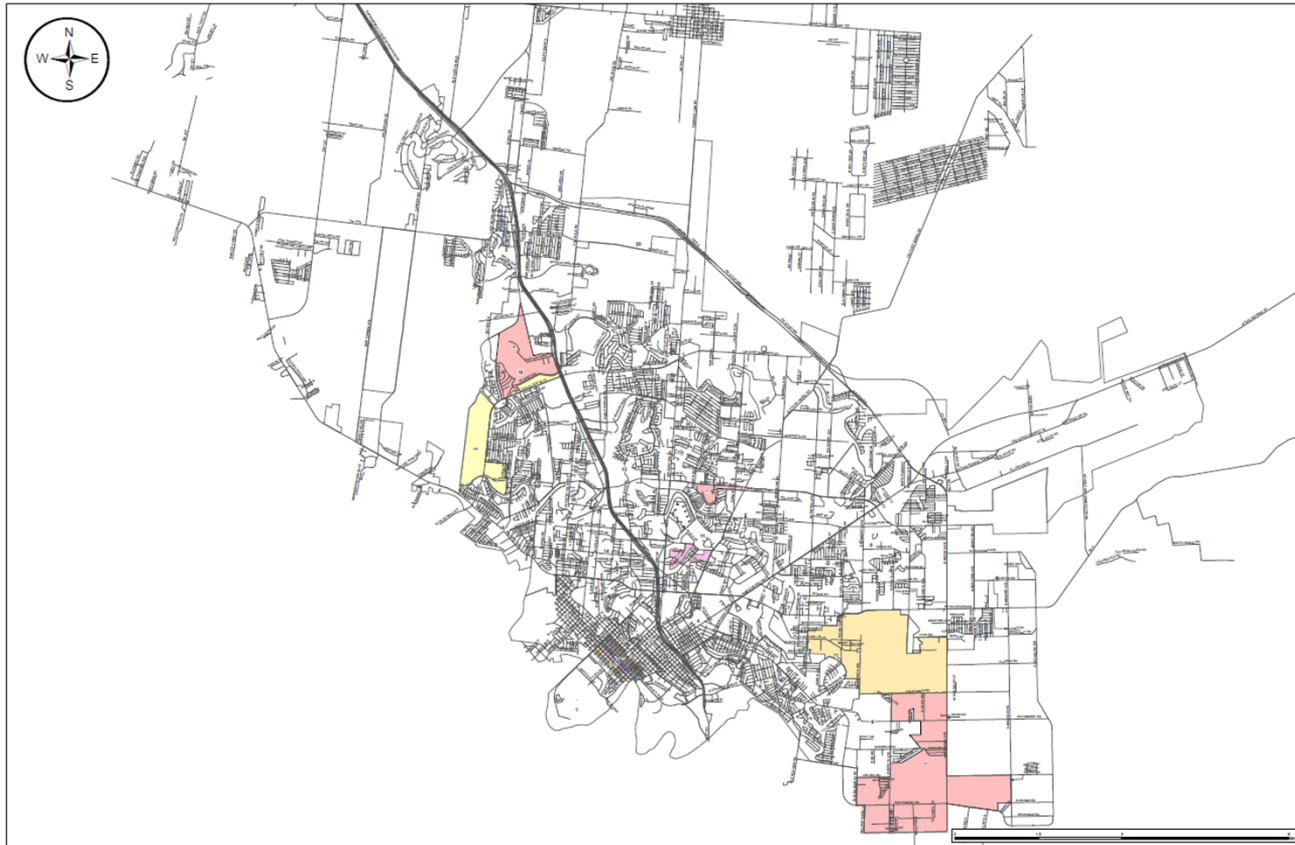


# BPUB AMI Solution

- **Landis + Gyr**
  - Electric meters
  - Gridstream mesh RF network
  - Command Center headend system
- **Badger**
  - Water meters
  - Badger Orion LTE-m cellular endpoints
  - BEACON headend system
- **SmartWorks**
  - Compass Meter Data Management System (MDMS) for electric and water
- **Allegiant**
  - Electric and water meter and network installation services



## Initial Deployment Area



The initial deployment area (IDA) will deploy

- 2,819 electric meters
- 2,446 water meters
- 1 network gateway
- 7 network routers

# Contracting Snapshot

- BPUB team led negotiations with support from
  - Spencer Fane legal team focusing on terms and conditions
  - E Source negotiations team focusing on statements of work
- Contracting began in January 2023
  - Initial legal support provided by DTRG
  - Spencer Fane replaced DTRG as legal counsel in May 2023
- Negotiating teams worked through 22 separate documents across four vendors. Contracting documents include:
  - General services contracts
  - Master services agreements
  - Material pricing
  - Construction agreements
  - Statements of work
  - Performance acceptance and payment criteria
  - Supplementary conditions and support agreements
  - SAAS agreements
- A thorough and exacting negotiation process is crucial as they establish the foundation for 20+ year relationships with these vendors

# AMI Contracts

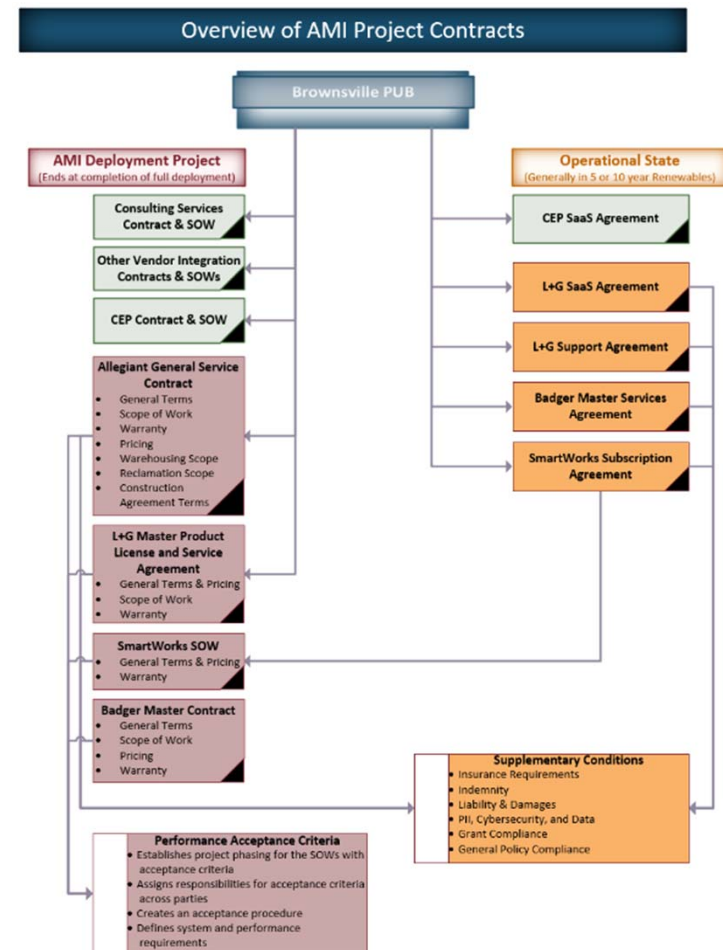
The AMI contracts cover both the deployment project and the long-term operational state

## Vendors

- Landis+Gyr
- Badger
- Allegiant
- Harris

## Services & Equipment

- Electric and water meters orders and pricing
- AMI RF network and equipment
- Cellular endpoints and network
- Meter and network installation services
- Software licenses and support
- Software implementation and integration services



# Performance Acceptance & Payment Criteria

- These contracts require substantial coordination between vendors
- To prevent cross-talk, a common exhibit was added to all contracts to align responsibilities
- Vendors must prove they have completed certain milestones before invoicing for payment or proceeding with additional work

Criteria	Landis+Gyr	Badger Meter	Allegiant	SmartWorks	Brownsville Public Utilities Board
Provide Notice to Proceed	A (10%)	A (10%)	A (10%)	A (10%)	R
Approve a project charter	C	C	C	C	R/A
Define a project team	R/C/I (2%)	R/C/I	R/C/I (2%)	R/C/I (2%)	R/A/C
Produce a project communication plan	C	C	C	C	R/A
Coordinate, schedule, and attend a kickoff meeting	R (5%)	R (10%)	R (5%)	R (5%)	R/A
Produce a Project Execution Plan	C	C	C	C	R/A

*The Performance Acceptance & Payment Criteria document divides the project into phases, and each phase has criteria broken into a RACI\* matrix; this excerpt is for the Planning Phase*

\*RACI – Responsible, Accountable, Consulted, Informed

# Landis+Gyr



## Scope

- 55k electric meters
- 16 network gateways & 33 routers
- Headend software: Command Center
- Software integrations
- Professional Services including training, testing, & management

## Fees

- \$6.7 million total capital
- \$6k monthly O&M
- 15-year initial term + 3-year renewal terms

## Key Takeaways

- Landis+Gyr has committed to meeting service level agreements (SLAs) for network performance and read delivery
- Integrations include OMS
- Reactive meter upgrade



# Landis+Gyr



## Support Agreement – Limitation of Liability

- Aggregate liability shall not exceed total amount paid to L+G under the agreement in the 24-month period preceding event giving rise to a claim
- No indirect, consequential, incidental, special, punitive, or exemplary damages
- Exclusions: personal injury, death, damage to real or tangible personal property caused by negligent acts, omissions, or willful misconduct
- Master Agreement:
  - First 5 years: Greater of \$500,000 or fees paid and payable by customer to L+G during preceding 23-month period
  - After initial 5-year term: fees paid and payable by customer to L+G during preceding 23-month period

## Support Agreement – Indemnity

- § L+G to indemnify for third party claims arising out of or resulting from: violation of law; liens or bonds asserted by subcontractors; bodily injury or death or property damage; service provider's provision of or customer's use of the services; breach of confidential information; IP infringement

## Governing Law and Venue

- Actions to be tried in the State and Federal courts in Cameron County, Texas.
- No trial by jury.

# Badger



## Scope

- 18k water meters & 40k registers
- 57k cellular endpoints
- Headend software: BEACON
- Software integrations
- Professional Services including training, testing, & management

## Fees

- \$11.1 million total capital
- \$37k monthly O&M
- 10-year initial term + negotiable renewal terms

## Key Takeaways

- Badger did not commit to BPUB's damages terms
- BPUB will need to apply for a Buy America waiver for WaterSMART grant

# Badger



## Limitation of Liability

- No indirect, consequential, incidental, special, punitive, exemplary, or enhanced damages
- SaaS MSA:
  - Lesser of \$500,000 or the aggregate amounts paid under the agreement in the preceding 24-month period preceding the event giving rise to the claim

## Indemnity

- § Badger to indemnify for claims arising out of or resulting from: violation of law; liens or bonds asserted by subcontractors; bodily injury or death or property damage; service provider's provision of or customer's use of the services; breach by contractor of the agreement; breach of confidential information

## Governing Law and Venue

- Actions to be tried in the State and Federal courts in Cameron County, Texas.

# Harris



**HARRIS**

## Scope

- Compass Software: MeterSense, VEE Acceptance Prediction Extension, KPI Dashboard, Automated MIMO, Automated Remote Disconnect
- Software integrations including Cayenta CIS
- Professional Services including training, testing, & management

## Fees

- \$370k total capital
- \$198k annual O&M
- 5-Year Initial Term + 1-Year Renewal Terms

## Key Takeaways

- Harris provides PUB's CIS and will provide the Customer Portal, so integrations are well-known
- PUB has already done preliminary meter configurations to right-size the MDMS

# Harris



## Limitation of Liability

- § No indirect, consequential, incidental, special, punitive, or exemplary damages
- § Actual direct damages shall not exceed one- and one-half times (1.5X) annual subscription fees paid by BPUB to SmartWorks under the agreement

## Support Agreement – Indemnity

- § SmartWorks to indemnify BPUB for software IP infringement

## Governing Law and Venue

- Actions to be tried in the State and Federal courts in Cameron County, Texas.
- No trial by jury

# Allegiant



## Scope

- Water meter exchanges and retrofits
- Electric meter exchanges
- Electric RF communications network installation
- New electric meter testing
- Old electric meter reclamation
- Warehousing support

## Fees

- \$5.8 million total capital
- Contract ends after implementation

## Key Takeaways

- Allegiant abides by PUB's Living Wage policy and will also abide by Davis-Bacon requirements for WaterSMART grant funding
- Scope of work details many processes related to field and data quality, assurance, and standard operating procedures
- Additional meter box work may increase total costs by an estimated \$700k - \$3M
- Use of PUB warehousing reduced total cost

# Allegiant



## Support Agreement – Indemnity

- § Allegiant to indemnify for claims arising out of or resulting from: violation of law; liens or bonds asserted by subcontractors; bodily injury or death or property damage; service provider's provision of or customer's use of the services; breach by contractor of the agreement; breach of confidential information

## Delay

- § Time limits in the contract documents are to be of the essence of the agreement.
- § Recovery damages for delay are not excluded

## Release

- Allegiant releases BPUB from all claims for injury or death of any person and loss of or damage to property caused by Allegiant's work

## Governing Law and Venue

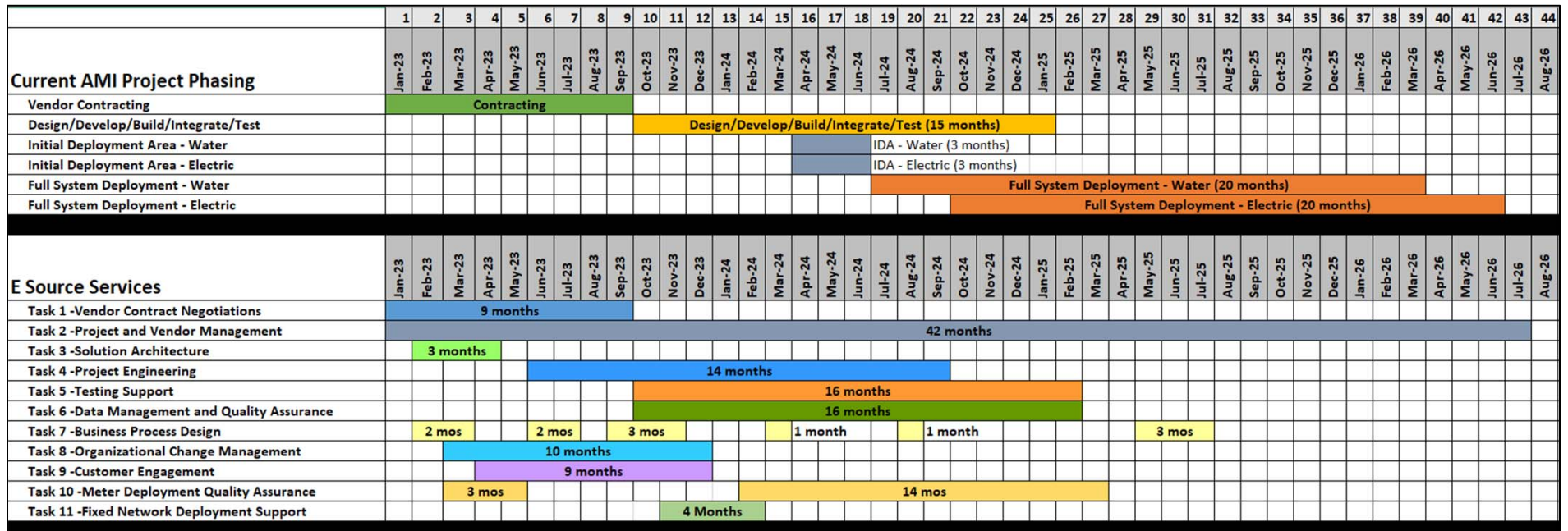
- Actions to be tried in Cameron County, Texas.

# Capital Budget by Vendor

Vendor	Total CapEx	3 yrs. Capitalized OpEx	Total CapEx + 3 yrs. Capitalized OpEx
Landis+Gyr	\$ 6,739,245	\$ 231,879	\$ 6,971,124
Badger	\$ 11,222,766	\$ 904,048	\$ 12,126,814
Allegiant	\$ 5,685,466	\$ -	\$ 5,685,466
SmartWorks	\$ 370,750	\$ 595,653	\$ 966,403
E Source	\$ 1,734,533	\$ -	\$ 1,734,533
Spencer Fane	\$ 100,000	\$ -	\$ 100,000
Interfaces	\$ 100,000	\$ -	\$ 100,000
Subtotal	\$ 25,952,760	\$ 1,731,580	\$ 27,684,340
Contingency			\$ 2,557,323
<b>Total</b>	<b>\$ 25,952,760</b>	<b>\$ 1,731,580</b>	<b>\$ 30,241,663</b>

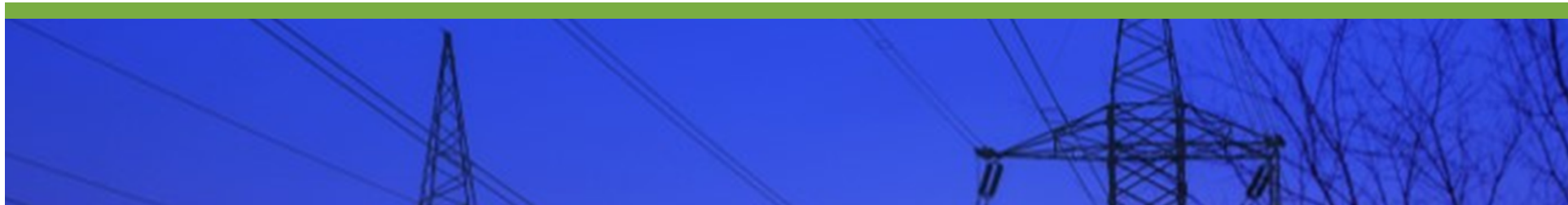


# Estimated Project Schedule

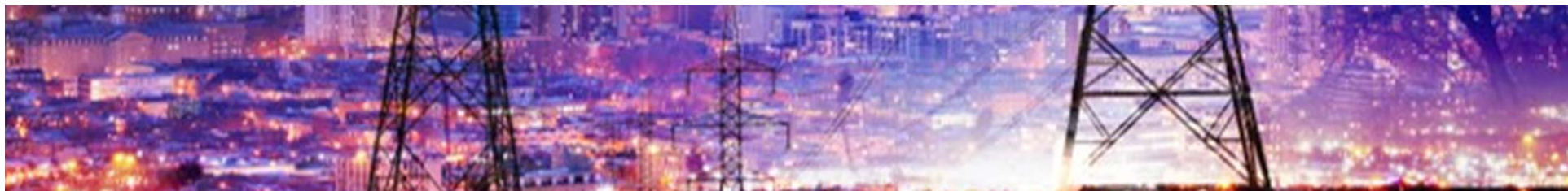


# Questions?





# Appendix

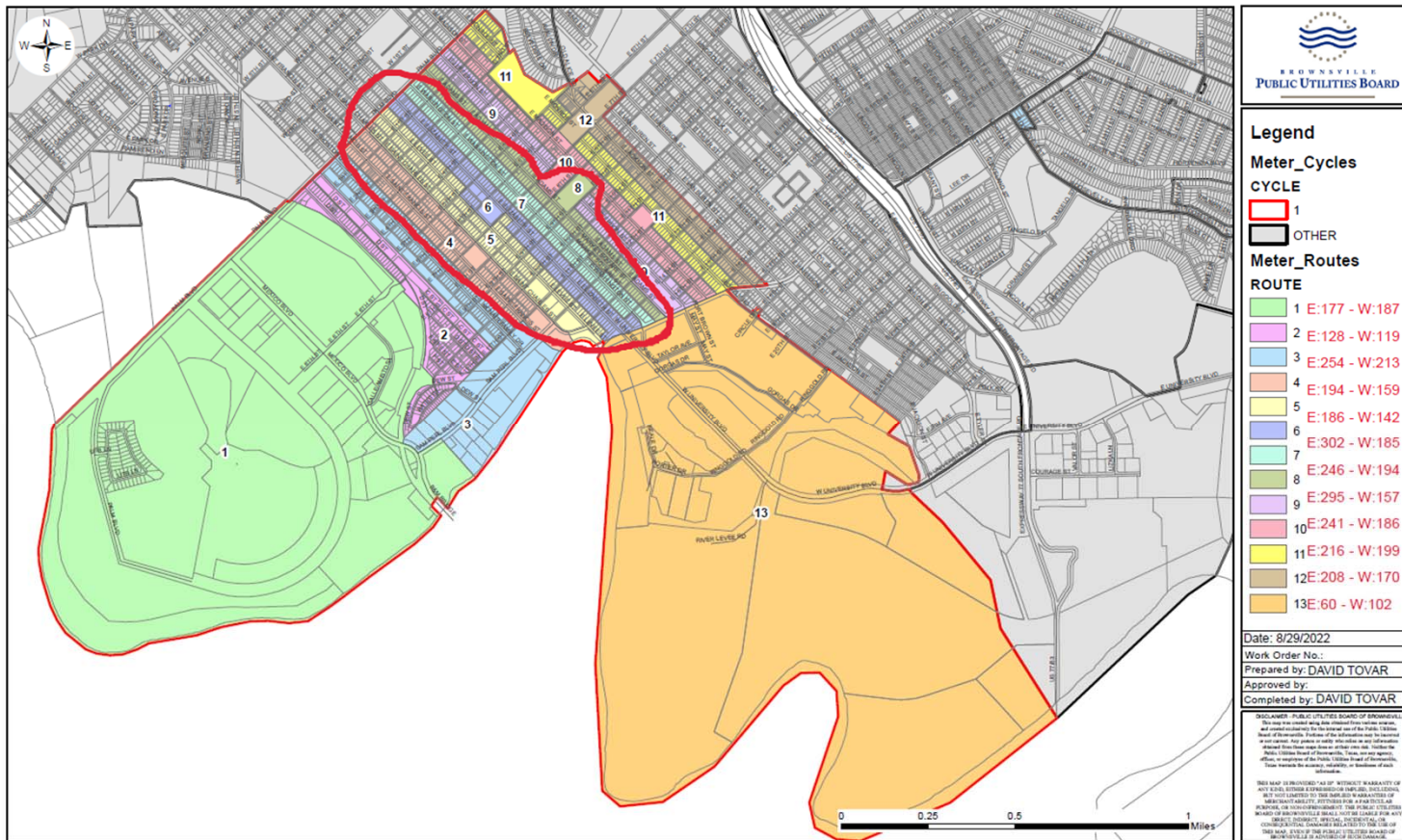


# Estimated 5-Year O&M Budget by Vendor

	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	Subtotal
<u>Landis+Gyr</u>	\$73,565	\$77,232	\$81,082	\$85,126	\$89,371	\$406,376
<u>Badger</u>	\$0	\$448,663	\$455,385	\$462,207	\$469,132	\$1,835,387
<u>Harris</u>	\$198,551	\$198,551	\$198,551	\$198,551	\$198,551	\$992,755
<b>Annual Total</b>	<b>\$272,116</b>	<b>\$724,446</b>	<b>\$735,018</b>	<b>\$745,884</b>	<b>\$757,054</b>	<b>\$3,234,518</b>



## IDA Detail - Downtown



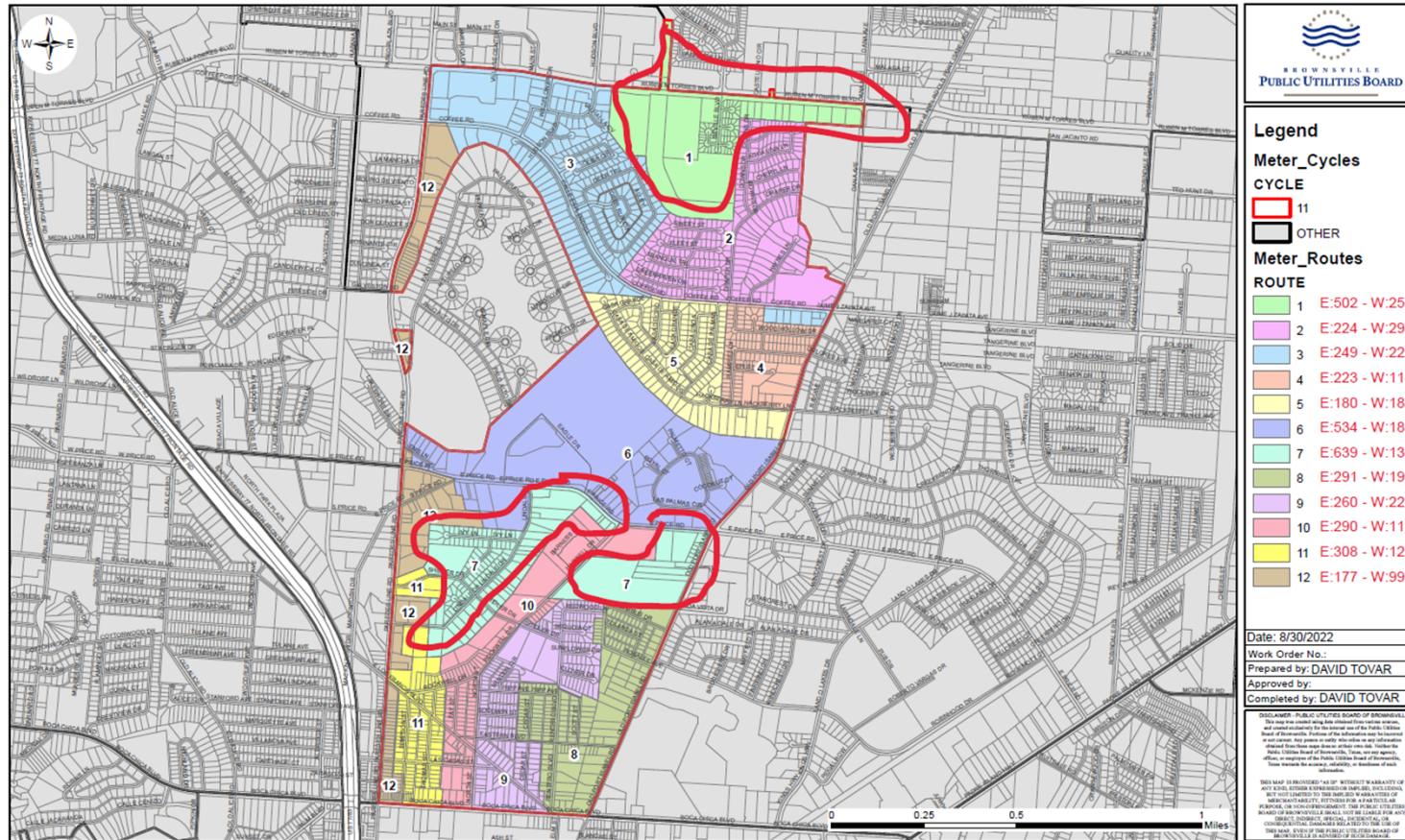
### Area details:

- High density with meters clustered in tight areas including alleys
- 1223 electric meters
- 837 water meters
- Locations of note:
  - E. Saint Francis
  - E. Saint Charles
  - E. Levee
  - E. Elizabeth
  - E. Washington
  - E. Adams
  - Putegnat Elementary School
  - Wells Bank
  - IBC Bank
  - Texas State Bank





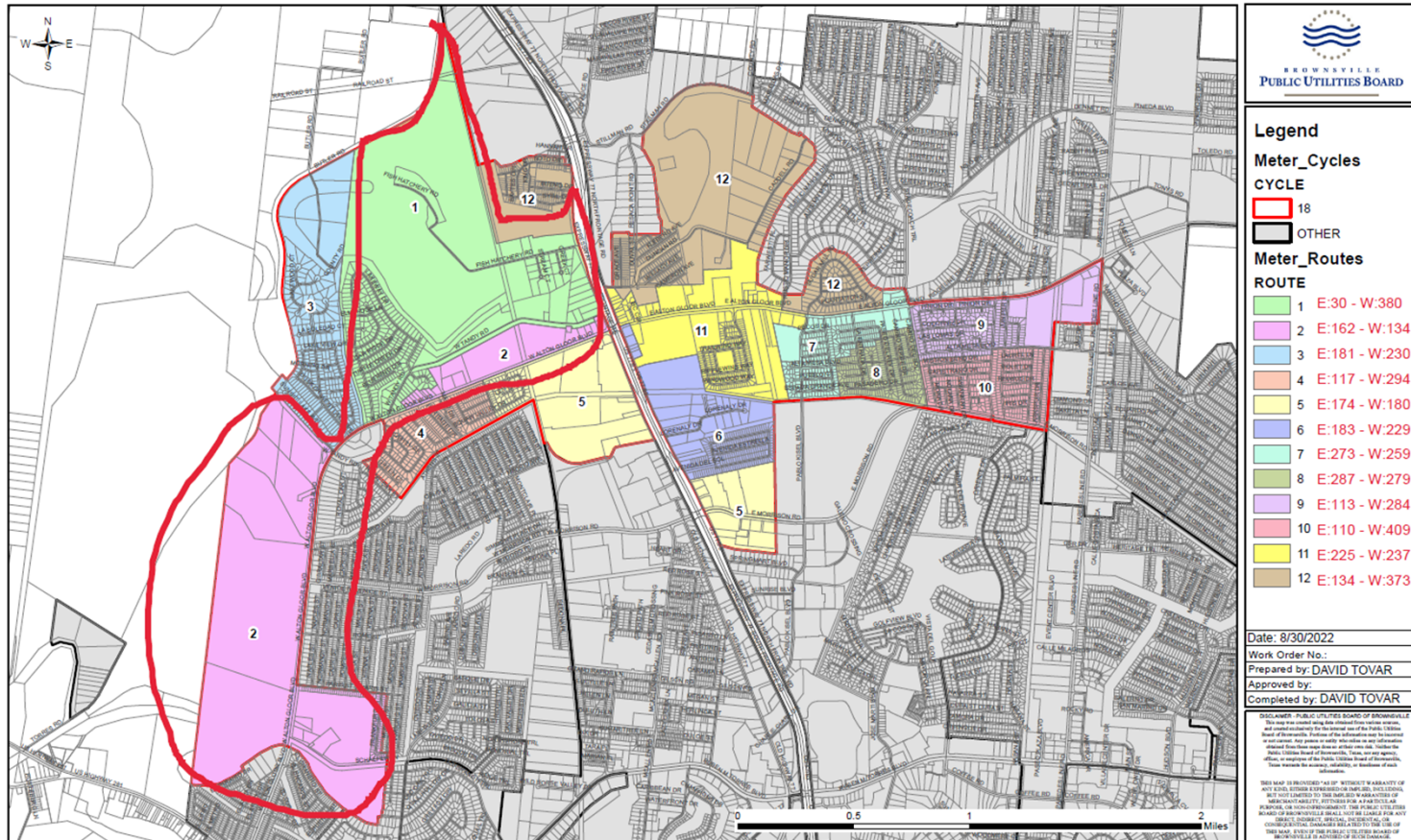
## IDA Detail – Price & Ruben Torres



Area details:

- Apartment complexes with both water and electric service provides opportunity to stress test full system
- 1141 electric meters
- 387 water meters
- Locations of note:
  - La Mansion Del Paso Apartments
  - La Residencia Apartments

## IDA Detail – West Alton Gloor



Area details:

- Significant number of water customers provides opportunity to stress test communications
- 192 electric meters
- 514 water meters
- Locations of note:
  - 5 schools - Ortiz, Yturria, Stillman, Keller, Manzano

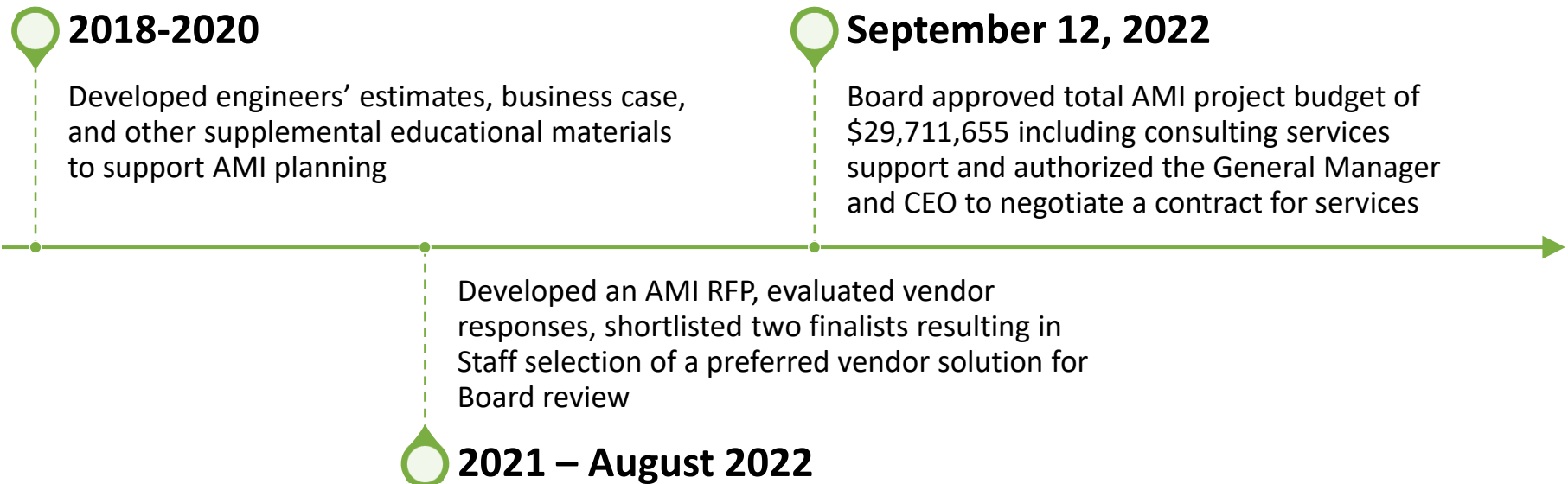




# Project Timeline



# Project Recap

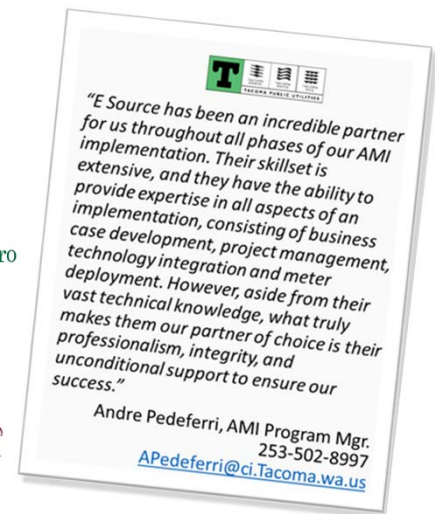


# Estimated Project Schedule

Task / Milestone	Est. Date
Vendor Contracting Completed & PO issued	10/27/2023
Project Initiation Complete	1/17/2024
Project Kickoff	1/22/2024
Detailed Planning Complete	2/15/2024
Bench Testing Complete	6/12/2024
Systems Installation & Integration Complete	7/10/2024
Initial Deployment Area Complete	8/21/2024
Water Full Deployment Start	8/22/2024
Electric Full Deployment Start	11/28/2024
Full Network Installation Complete	12/11/2024
Water Full Deployment Complete	4/3/2026
Electric Full Deployment Complete	6/2/2026

# The E Source Team

*Our team has provided similar services to more than 200 utility and municipal clients across North America*



# E Source = Utility Specialists + AMI Experts





# **Advanced Metering Infrastructure Tangible Benefits**



# Key Benefits



## Customer

- 10 Enhanced customer experience
- 10 Fewer estimated bills
- 10 Reduced disputes
- 10 Leak detection & notification
- 10 Online tools
- 10 Consumption management
- 10 Quicker outage restorations
- 10 Reduced carbon emissions
- 10 Water conservation



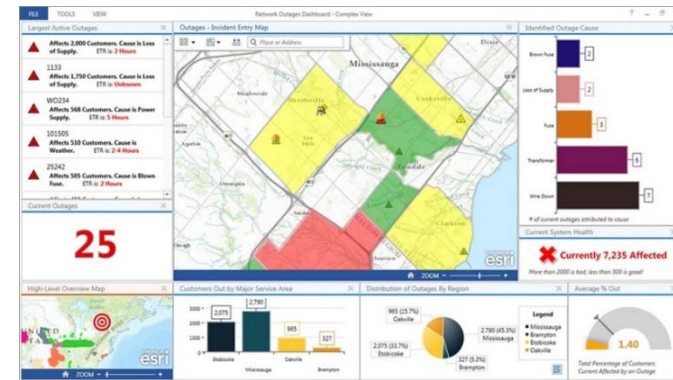
## Utility

- 10 Timely & accurate meter reading
- 10 Reduced truck rolls
- 10 Enhanced outage detection
- 10 System planning & optimization
- 10 Water leak detection
- 10 Reduced bill adjustments
- 10 Real-time analytics
- 10 Theft detection
- 10 Improved safety
- 10 Reduced carbon emissions
- 10 Water conservation



# Proactive Instead of Reactive

- The Utility Business Model is changing rapidly
  - Customers expect proactive notification
    - Outage notification and duration
    - Water leak notification
    - High electrical consumption
    - Communication via text, email or phone
  - Brownsville's median age is 29 years old\* millennial generation
- In order to satisfy changing expectations, BPUB must strive to be proactive
- AMI is a foundational technology to support this goal



\* Source: Brownsville Chamber of Commerce



# How can AMI support proactive leak detection and notification?

- AMI could detect that there was a leak and text the customer about the high-water consumption.
- The customer would have found the leak, stopped it sooner avoiding the water and sewer charges and any damage the prolonged leak caused.

Hi Eddie,

Happy New Year! We discovered an underground water leak in our courtyard on 1/6/20. It seemed minor but our 1/3/20 PUB bill (attached) states we used 233,000 gallons on meter [REDACTED]. Our December bill showed usage of 38,000 gallons and November showed 34,000 gallons (both also attached). We had the leak repaired immediately (junction where main 3" reduces down to 1") and we've checked the meter, which indicates things are back to normal. There was no indication of excessive water use; Tony sent me a picture (attached) that led to the discovery.

We've requested and received a refund in the past from PUB for this type of situation and request the same now. In addition, I'd like to know if PUB has any kind of electronic device that could monitor our meters and identity unusual usage outside of school hours.

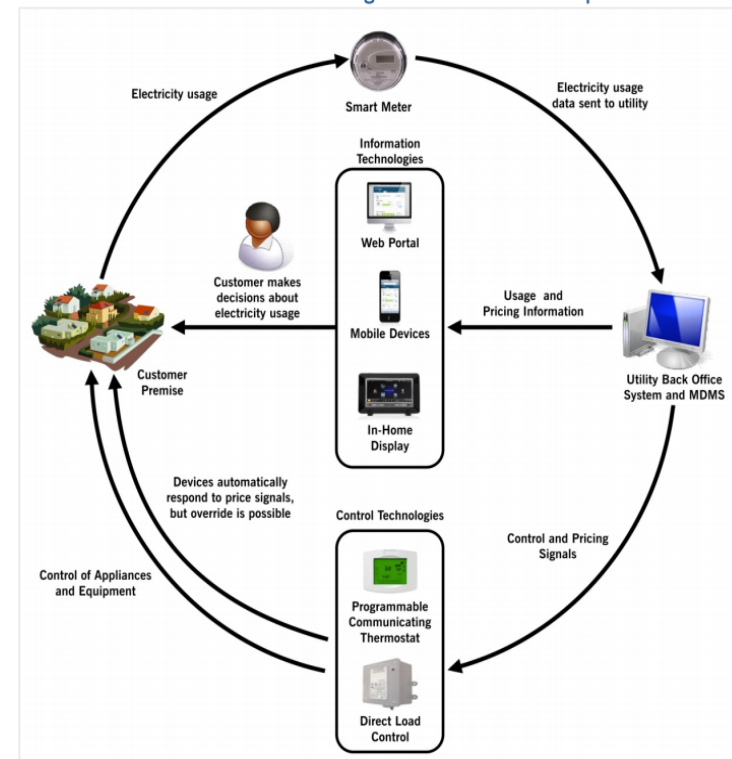
Thanks,

JMP

# How could AMI have helped in a Demand Reduction Event?

- The Utility could have reduced energy use on individual accounts
  - Customers receive proactive notification of
    - Limited duration shutoff
    - Rotated across the utility
    - No full circuit cut off
    - No massive demand on restarting a circuit
- Will prevent damage to existing infrastructure by a very controlled connect/disconnect program
- AMI would have dramatically reduced the outage timeframe from the Demand Reduction Event
- AMI typically reduces storm outages disruptions in the order of around 30%

Figure 2. AMI and Customer Systems Work Together to Automate Functions and Manage Demand-Side Consumption



# How can AMI Support Outage Management and Verification?



AMI technology will provide the power status of all electric meters in real time



After major storms, there is no need to send scout crews out in unsafe conditions



Now: crews must manually check if outage has been fully restored or if there are still pockets of customers without power

**With AMI: crews wait 5 minutes, call Dispatch to refresh the system, and know exactly who has power and who does not.**

# Case Study: Loudon Utilities Board

- A new AMI electric meter sent a high temperature alarm to the utility
- Customer was visited by field staff to take a closer look
- Possible tragedy averted and a very happy customer



A post shared by a customer to the LUB Facebook page generated substantial goodwill for the utility.

# Case Study: Arlington Water Utilities



Texas A&M has conducted studied with Arlington Water Utilities to determine customer impact from AMI implementation



81% of customers who had access to their usage data felt they had a better understanding of their consumption



Over half (54%) of customers reported altering their usage patterns or being more conscious of usage to promote conservation

## Examples of Realized Benefits

- Plano, TX: after providing customers access to their interval consumption data, overall call volumes dropped by 35% (from approximately 5,000 per month to 3,250 per month)
- Institute for Applied Ecology: in a survey, AMI has been shown to reduce peak demand anywhere from 2-20%
- Midwest Energy: averted over 95% of customer truck rolls for disconnects and investigations

## Examples of Realized Benefits Cont.

- Sacramento, CA: Realized savings of approximately 236 million gallons—12.6 gallons per capita per day—by fixing ~807 field-verified leaks between 2010-2011
- Leesburg, PA: reduced the non-revenue water loss from 50% to 15% after installing AMI technology to diagnose and reduce distribution leaks
- Central Maine Power: saw a nearly 30% decrease in customer calls for billing disputes and inquiries

## Examples of Realized Benefits Cont.

- Burbank Water and Power: reports outages on its map within 2 minutes of power outage occurring
- Albuquerque Bernalillo County Water Utility Authority: averted 79% of leak credits by providing customers proactive notification of when a leak occurs
- Oklahoma Gas & Electric: reduced customer complaints by nearly 85%





# BPUB AMI Team



# Departmental Representation

- Because AMI will affect all areas of operations, BPUB's evaluation team invited staff from across departments to participate
- The assembled team represents a cross-section of Customer Service, IT, Engineering, Electric Operations, Water Operations, Billing, SCADA, and Communications



# Evaluation Team Members

Eddy Hernandez – Dir. Cust. Service & IT	Luis Reyes – Electrical Engr.
Eduardo Campirano – Cust. Service Mgr.	Valeria Garza – Electrical T&D
Jose Garza – W/WW Maintenance Mgr.	Manuel Pena – Electric Meter Shop Supv.
Norma Gomez – CIS Support Mgr.	Luis Jimenez – Business Processes
Ryan Greenfeld – Comm & PR Mgr.	Eli Alvarez – Electric T&D Area Mgr.
Jose Luis Lopez – IT Hardware Mgr.	Arnulfo Mejia – Substations Mgr.
Omar Banda – IT Communications	Manuel Arredondo – Electric Ops Mgr.
Sergio Martinez – IT Mgr.	Eliazar Perez – Electrical Engr Mgr.
Elias Quintero – SCADA & Elec Supp Mgr.	Cesar Cortinas – Dir. Electric T&D
David Ramirez – W/WW Engr.	Diane Solitaire & Hugo Lopez - Purchasing