EMPLOYEE SURVEY

2018
**PROJECT GOALS**

**Assess**
- Conduct Engagement Survey:
  - Establish Baseline
- Benchmark Comparisons

**Understand**
- Measure and Evaluate:
  - Critical Elements of the Employee Experience
  - What Employees Value

**Act**
- Use Feedback to:
  - Enhance the Employee Experience
  - Fuel the success and growth of [Company] and our employees
**Understanding Item Detail**

**Engagement**

<table>
<thead>
<tr>
<th>Dimension name or item text</th>
<th>% Favorable</th>
<th>% Neutral</th>
<th>% Unfavorable</th>
<th># of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engagement</strong></td>
<td>78%</td>
<td>14%</td>
<td>8%</td>
<td>19040</td>
</tr>
<tr>
<td><strong>Tacoma Public Utilities Overall</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>REPORT OWNER</strong></td>
<td>86%</td>
<td>9%</td>
<td>5%</td>
<td>117</td>
</tr>
<tr>
<td><strong>Direct Report 1 (if meeting minimum N)</strong></td>
<td>81%</td>
<td>12%</td>
<td>7%</td>
<td>45</td>
</tr>
<tr>
<td><strong>Direct Report 2 (if meeting minimum N)</strong></td>
<td>78%</td>
<td>14%</td>
<td>8%</td>
<td>38</td>
</tr>
</tbody>
</table>

**Comparison Scores**

- Tacoma Public Utilities Overall: +2, -1, -3
- Govt. / Non-Profit Norm: 0, -3, -5
- Overall Norm: -4, -13, -15

**Additional Information:**
- To protect confidentiality, data is reported for groups of 7 or more employees who responded to the survey. If there are fewer than 7 people who responded to a question, you will see the phrase “Insufficient Number of Responses”.
- **Govt. / Non-Profit Norm** consists of local and country-wide governmental and non-for-profit organizations, such as City of Rochester, US Patent and Trademark Office, Saline Water Conversion Corporation, and The Nature Conservancy.
SUMMARY OF RESULTS

890 Total Respondents (Response Rate  67%)

Dimension Level Results
Community Focus
Engagement
Safety
Workload
Diversity & Inclusion
Work Environment
Rewards & Recognition
Feedback & Accountability
Considerate Treatment
Career & Development
Operational Effectiveness
Communication

Top 3 Most Favorable
1. I feel good about the ways Tacoma Public Utilities contributes to the communities we serve. 93%
2. Tacoma Public Utilities takes a genuine interest in the communities we serve. 92%
46. The benefits provided by Tacoma Public Utilities meet my needs. 90%

Bottom 3 Least Favorable
18. Where I work, decisions get made without undue delay. 37% 26% 37%
16. Where I work, promotions go to those who deserve them. 40% 29% 31%
19. When changes in programs, policies and procedures are made where I work, communications are usually handled well. 49% 21% 31%
EXECUTIVE BRIEFING: TPU OVERALL

Good participation
- Almost 2/3 completed the survey

Comparison to the Norms
- Overall norm: 13 above; 17 below
- Govt./Non-Profit: 5 above; 10 below

Engagement score is very strong:
- 4 items are above 75% favorable

STRENGTHS to LEVERAGE

Community Focus
- 93% feel good about the ways TPU contributes to the communities
  +13 vs Norm
- 92% agree that TPU is genuinely interested in the communities they serve
  +11 vs Norm
- 75% experience manageable levels of job stress
  +8 vs Norm

Workload
- 81% feel that they can maintain a reasonable work-life balance
  +10 vs Norm

AREAS to WATCH

Feedback & Accountability
- 88% understand how their job contributes to achieving TPU goals
  0 vs Norm
  -3 vs Gov/NP
- 55% feel people are held accountable
  -19 vs Norm
  -17 vs Gov/NP

Career & Development
- 81% say they received training to perform their job effectively
  +8 vs Norm
  +9 vs Gov/NP
- 61% feel that their career goals can be met at TPU
  +3 vs Norm
  -9 vs Gov/NP

OPPORTUNITY AREAS for ACTION

Operational Effectiveness
- 37% agree that decisions get made without undue delay
  -27 vs Norm
  -19 vs Gov/NP
- 50% believe the work is well organized
  -13 vs Norm
  -8 vs Gov/NP

Communication
- 49% agree that communications are handled well when changes in programs, policies, & procedures are made
  -14 vs Norm
  -7 vs Gov/NP

81% favorable

81% feel people are held accountable
-19 vs Norm
-17 vs Gov/NP

= Key Driver of Engagement for TPU Overall
# Top 5 Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Responses</th>
<th>Tacoma Public Utilities</th>
<th>Govt. / Non-Profit Norm</th>
<th>Overall Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel good about the ways Tacoma Public Utilities contributes to the communities we serve.</td>
<td>874</td>
<td>93%</td>
<td>6</td>
<td>+13↑</td>
</tr>
<tr>
<td>2. Tacoma Public Utilities takes a genuine interest in the communities we serve.</td>
<td>879</td>
<td>92%</td>
<td>6</td>
<td>+11↑</td>
</tr>
<tr>
<td>46. The benefits provided by Tacoma Public Utilities meet my needs.</td>
<td>884</td>
<td>90%</td>
<td>7</td>
<td>+18↑</td>
</tr>
<tr>
<td>40. I have received the training I need to perform my job safely.</td>
<td>866</td>
<td>89%</td>
<td>8</td>
<td>+4</td>
</tr>
<tr>
<td>48. I am proud to work for Tacoma Public Utilities.</td>
<td>882</td>
<td>88%</td>
<td>10%</td>
<td>+5↑</td>
</tr>
</tbody>
</table>

# Bottom 5 Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Responses</th>
<th>Tacoma Public Utilities</th>
<th>Govt. / Non-Profit Norm</th>
<th>Overall Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>18. Where I work, decisions get made without undue delay.</td>
<td>881</td>
<td>37%</td>
<td>26%</td>
<td>37%</td>
</tr>
<tr>
<td>16. Where I work, promotions go to those who deserve them.</td>
<td>846</td>
<td>40%</td>
<td>29%</td>
<td>31%</td>
</tr>
<tr>
<td>19. When changes in programs, policies and procedures are made where I work, communications are usually handled well.</td>
<td>879</td>
<td>49%</td>
<td>21%</td>
<td>31%</td>
</tr>
<tr>
<td>43. I am satisfied with my opportunity for advancement.</td>
<td>874</td>
<td>50%</td>
<td>22%</td>
<td>28%</td>
</tr>
<tr>
<td>17. Where I work, the work is well organized (smooth work flow, good methods and procedures, etc.).</td>
<td>884</td>
<td>50%</td>
<td>24%</td>
<td>26%</td>
</tr>
</tbody>
</table>
**Clear Areas of Strengths**

Items below are 75% Favorable or more AND greater than / equal to Tacoma Public Utilities Overall. These items can be considered as clear areas of strength that you can leverage as you focus on your areas of opportunity.

<table>
<thead>
<tr>
<th>Item</th>
<th>Responses</th>
<th>Tacoma Public Utilities %</th>
<th>Govt. / Non-Profit Norm</th>
<th>Overall Norm</th>
</tr>
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<tbody>
<tr>
<td>1. I feel good about the ways Tacoma Public Utilities contributes to the communities we serve.</td>
<td>874</td>
<td>93%</td>
<td>0</td>
<td>+13 ↑</td>
</tr>
<tr>
<td>2. Tacoma Public Utilities takes a genuine interest in the communities we serve.</td>
<td>879</td>
<td>92%</td>
<td>0</td>
<td>+11 ↑</td>
</tr>
<tr>
<td>46. The benefits provided by Tacoma Public Utilities meet my needs.</td>
<td>884</td>
<td>90%</td>
<td>0</td>
<td>+18 ↑</td>
</tr>
<tr>
<td>40. I have received the training I need to perform my job safely.</td>
<td>866</td>
<td>89%</td>
<td>0</td>
<td>+4</td>
</tr>
<tr>
<td>3. Tacoma Public Utilities is an environmentally responsible organization.</td>
<td>874</td>
<td>88%</td>
<td>0</td>
<td>+5 ↑</td>
</tr>
<tr>
<td>48. I am proud to work for Tacoma Public Utilities.</td>
<td>882</td>
<td>88%</td>
<td>0</td>
<td>+5 ↑</td>
</tr>
<tr>
<td>27. My supervisor treats me with respect and dignity.</td>
<td>883</td>
<td>86%</td>
<td>0</td>
<td>-1</td>
</tr>
<tr>
<td>20. Safety is a high priority where I work.</td>
<td>861</td>
<td>84%</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
### Clear Areas of Strengths

Items below are 75% Favorable or more AND greater than / equal to Tacoma Public Utilities Overall. These items can be considered as clear areas of strength that you can leverage as you focus on your areas of opportunity.

<table>
<thead>
<tr>
<th>Item</th>
<th>Responses</th>
<th>Tacoma Public Utilities</th>
<th>Govt. / Non-Profit Norm</th>
<th>Overall Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>52. Overall, I am satisfied with Tacoma Public Utilities as a place to work.</td>
<td>879</td>
<td>84% 11% 5</td>
<td>0 +5 +8</td>
<td></td>
</tr>
<tr>
<td>28. My supervisor listens to my concerns and suggestions.</td>
<td>880</td>
<td>83% 10% 8</td>
<td>+1 --- +2</td>
<td></td>
</tr>
<tr>
<td>22. My supervisor holds employees accountable for following safety procedures.</td>
<td>831</td>
<td>82% 13% 5</td>
<td>0 --- -1</td>
<td></td>
</tr>
<tr>
<td>21. Where I work we do not compromise our safety in order to meet other targets (costs, deadlines, etc.).</td>
<td>837</td>
<td>81% 13% 7</td>
<td>0 --- -1</td>
<td></td>
</tr>
<tr>
<td>31. I can maintain a reasonable balance between my personal life and work life.</td>
<td>882</td>
<td>81% 11% 7</td>
<td>0 --- +10</td>
<td></td>
</tr>
<tr>
<td>41. I have received the training I need to perform my job effectively.</td>
<td>884</td>
<td>81% 12% 7</td>
<td>0 +9 +8</td>
<td></td>
</tr>
<tr>
<td>24. My supervisor is competent in the technical aspects of the job.</td>
<td>883</td>
<td>80% 10% 10%</td>
<td>0 --- -3</td>
<td></td>
</tr>
<tr>
<td>47. My work gives me a feeling of personal accomplishment.</td>
<td>882</td>
<td>79% 14% 7</td>
<td>+1 -1 +2</td>
<td></td>
</tr>
</tbody>
</table>
## Clear Areas of Strengths

Items below are 75% Favorable or more AND greater than / equal to Tacoma Public Utilities Overall. These items can be considered as clear areas of strength that you can leverage as you focus on your areas of opportunity.

### RESPONSES

<table>
<thead>
<tr>
<th>Item</th>
<th>Responses</th>
<th>Favorable</th>
<th>Neutral</th>
<th>unfavorale</th>
<th>Tacoma Public Utilities</th>
<th>Govt. / Non-Profit Norm</th>
<th>Overall Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>37. I have the right tools, equipment, parts, and supplies needed to do my job.</td>
<td>882</td>
<td>79%</td>
<td>11%</td>
<td>10%</td>
<td>0</td>
<td>+3</td>
<td>+5</td>
</tr>
<tr>
<td>4. Tacoma Public Utilities has an environment where people of diverse backgrounds can succeed.</td>
<td>864</td>
<td>78%</td>
<td>14%</td>
<td>9%</td>
<td>0</td>
<td>+6↑</td>
<td>-2</td>
</tr>
<tr>
<td>26. My supervisor recognizes me when I do a good job.</td>
<td>884</td>
<td>78%</td>
<td>12%</td>
<td>10%</td>
<td>+1</td>
<td>-3</td>
<td>0</td>
</tr>
<tr>
<td>39. I am satisfied with my physical working environment (facilities, workspace, parking, safety, lighting, air quality, temperature, etc).</td>
<td>884</td>
<td>77%</td>
<td>11%</td>
<td>13%</td>
<td>0</td>
<td>---</td>
<td>+4</td>
</tr>
<tr>
<td>42. I have the opportunity to continually learn and grow.</td>
<td>887</td>
<td>76%</td>
<td>13%</td>
<td>11%</td>
<td>0</td>
<td>+3</td>
<td>+9↑</td>
</tr>
<tr>
<td>29. My supervisor values diverse ideas and perspectives.</td>
<td>873</td>
<td>75%</td>
<td>15%</td>
<td>10%</td>
<td>0</td>
<td>---</td>
<td>-6↓</td>
</tr>
<tr>
<td>23. My supervisor works to remove obstacles that impede our work processes.</td>
<td>878</td>
<td>75%</td>
<td>14%</td>
<td>12%</td>
<td>+1</td>
<td>---</td>
<td>0</td>
</tr>
<tr>
<td>30. My supervisor is competent in dealing with people.</td>
<td>881</td>
<td>75%</td>
<td>13%</td>
<td>13%</td>
<td>0</td>
<td>---</td>
<td>-3</td>
</tr>
</tbody>
</table>
**Areas for Improvement**

Items below are 55% Favorable or less AND lower than Tacoma Public Utilities Overall. These items can be considered as areas of opportunity for you to take action.

<table>
<thead>
<tr>
<th>Responses</th>
<th>Tacoma Public Utilities</th>
<th>Govt. / Non-Profit Norm</th>
<th>Overall Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Senior Leaders give employees a clear picture of the direction your department is headed.</td>
<td>877</td>
<td>51% 24% 25%</td>
<td>-1 --- ---</td>
</tr>
<tr>
<td>43. I am satisfied with my opportunity for advancement.</td>
<td>874</td>
<td>50% 22% 28%</td>
<td>-1 --- -8 ↓</td>
</tr>
<tr>
<td>13. I believe the results of this survey will be used constructively.</td>
<td>839</td>
<td>49% 32% 19%</td>
<td>-1 -16 ↓ -18 ↓</td>
</tr>
<tr>
<td>9. Executive Leadership Team's actions are consistent with what they say (they &quot;walk the talk&quot;).</td>
<td>844</td>
<td>47% 34% 19%</td>
<td>-1 -15 ↓ -16 ↓</td>
</tr>
</tbody>
</table>
### Key Drivers of Engagement

**For Key Drivers of Engagement**

890 Total Respondents (Response Rate 67%)

<table>
<thead>
<tr>
<th>Question</th>
<th>Responses</th>
<th>Tacoma Public Utilities</th>
<th>Govt. / Non-Profit Norm</th>
<th>Overall Norm</th>
</tr>
</thead>
<tbody>
<tr>
<td>44. I feel that my career goals can be met at Tacoma Public Utilities.</td>
<td>870</td>
<td>61%</td>
<td>22%</td>
<td>17%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>-9</td>
<td>-3</td>
</tr>
<tr>
<td>34. I clearly understand how my own job contributes to achieving the</td>
<td>885</td>
<td>87%</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>goals of Tacoma Public Utilities.</td>
<td></td>
<td>-1</td>
<td>-4</td>
<td>-1</td>
</tr>
<tr>
<td>2. Tacoma Public Utilities takes a genuine interest in the communities</td>
<td>879</td>
<td>92%</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>we serve.</td>
<td></td>
<td>0</td>
<td>---</td>
<td>+11</td>
</tr>
<tr>
<td>46. The benefits provided by Tacoma Public Utilities meet my needs.</td>
<td>884</td>
<td>90%</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>---</td>
<td>+18</td>
</tr>
<tr>
<td>31. I can maintain a reasonable balance between my personal life and</td>
<td>882</td>
<td>81%</td>
<td>11%</td>
<td>7</td>
</tr>
<tr>
<td>work life.</td>
<td></td>
<td>0</td>
<td>---</td>
<td>+10</td>
</tr>
</tbody>
</table>
What do you like most about working at Tacoma Public Utilities?

- Work Environment: 227
- Other: 129
- Career and Development: 101
- Community Focus: 97
- Operational Effectiveness: 57
- Considerate Treatment: 40
- Workload: 18
- Diversity and Inclusion: 17
- Communication: 14
- Rewards and Recognition: 127
- Safety: 19
- Feedback and Accountability: 35

What is one change that would improve your work experience at Tacoma Public Utilities?

- Work Environment: 113
- Other: 76
- Career and Development: 97
- Community Focus: 149
- Operational Effectiveness: 49
- Considerate Treatment: 41
- Workload: 20
- Diversity and Inclusion: 58
- Communication: 17
- Rewards and Recognition: 19
- Safety: 35

890 Total Respondents (Response Rate 67%)
Step 1: Understand Your Report
• Chapters in report & report roadmap

Step 2: Interpret Your Results
• Strengths
• Concerns
• Questions

Step 3: Prepare & Conduct Effective Meetings
• Learn how to set powerful actions in motion

Step 4: Set Powerful Plans and Maintain the Momentum
• Create action plans that get results
INTERPRETING THE RESULTS

Interpretive Lenses

Receive Report

Results -> Reaction -> Context -> Priorities

Questions & Possible Actions

Desired Outcomes
CONSIDER THE CONTEXT

What is going on in...

All these factors can impact the results
FOCUS ON THE BUSINESS PRIORITIES

Results

Reaction

Context

Priorities

What are the key initiatives for the department?

What kind of working environment is needed to create & meet these initiatives?

What do the survey results indicate about the current working environment?

Example

Improve customer service results.

Effective Teamwork
Clear Communication
Engagement

Employee pride is high, but teamwork is low. Why?
DEVELOP “SMART” ACTION PLANS

Action Plan SMARTS:

- **Specific steps**: create detailed descriptions for each step of the plan
- **Measure and follow-up**: track the workgroup's progress, send reminders, update statuses, and periodically evaluate the plan
- **Actionable items**: ensure all action item owners have control/influence over the selected items
- **Realistic goals**: unreachable goals can be de-motivating
- **Time bound**: indicate completion dates for each step
- **Situational factors**: take into consideration the current situation and the broader context for the line of business

Build on employee input and use the own knowledge and perspective as a Supervisor

Say **who** will do **what** by **when**, and plan to follow up
THE PROJECT LIFE-CYCLE

Assess
- Establish project plan
- Define communication strategy
- Customize look and feel of survey tools
- Ensure site connectivity

Pre-Survey Admin
- Design or review/refine questionnaire
- Capture current org structure
- Test survey internally

Survey
- Administer survey
- Monitor participation
- Send reminders
- Early Fall

Results Distribution
- Analyze data and QC
- Dec:
- Present executive summary

Action Planning
- Release reports
- Train managers on using results
- Determine action priorities and recommendations
- Facilitate action planning by managers

Debrief and Evolve
- Debrief with Mercer | Sirota and internal project team
Advanced Metering Infrastructure (AMI) Program Update

‘The Digital Foundation to Enhance the Customer Experience’

Public Utility Board
Study Session
January 9, 2019
winter safety
STAY SAFE DURING THE WINTER SEASON
1. Introduction (5 minutes)
2. TPU Digital Engagement Strategy (10 minutes)
3. AMI Refresher (10 minutes)
4. AMI Program Update (10 minutes)
5. AMI Business Case Calibration (20 minutes)
6. Vendor Contract Proposals (20 minutes)
7. Customer Communications & Outreach Strategies (5 minutes)
8. Wrap Up (10 minutes)
“We can no longer stay in our comfort zone on our side of the meter – providing basic electric service and sending bills. We must diversify the menu, develop new rate designs to handle increased demands on our distribution grids, adapt to changing customer preferences, and prove we can be our customers’ trusted energy advisors.”

Sue Kelly, President of the American Public Power Association
Digital transformation is the application of modern technology to processes, products, and assets to improve efficiency, enhance customer value, manage risk, and uncover new revenue opportunities.

Digital Natives

Amazon

Digital Adapters

Uber

Netflix

Digital Deniers

Blockbuster

Kodak

Sears
Our business drivers

- Ever-increasing customer expectations
- Advanced metering infrastructure
- An evolving workforce
Digital vision for customers

Value my time
Value my money
Value me
Value my preferences

TPU Customers
Digital vision for employees

- Collaboration
- Communications
- Culture
- Safety
A single TPU brand experience

Deliver a consistent TPU customer experience that accounts for our overlapping customer base, service offerings, and choice of channels our customers prefer to use.
Today as a TPU customer...

- I am only able to use a few channels to interact with TPU
- I have a hard time finding and accessing the resources I need to address my issues
- I have to contact TPU every time I have a problem or issue
- I get different information from different sources from TPU depending on which channel I use

Tomorrow, enabled by digital utility offerings...

- Omni-channel personalization: I can interact with TPU via my preferred channel and learn about utility services that I find valuable
- Customer empowerment: I can easily locate the answers to my questions and resolve issues myself
- Proactive communications: TPU will proactively inform me of an issue or outage on my preferred communications channel
- Consistency & simplification: I get the same information no matter how I contact TPU and know what to expect at every interaction

Omni-channel personalization
Customer empowerment
Proactive communications
Consistency & simplification
Digital Business Transformation Initiatives

**Equitable Access for All Customers**
- mytpu.org redesign
- Enhanced customer portal
- Customer analytics use cases
- Enhanced customer outage notifications
- Digital signage at TPU campus

**Tacoma Economic & Workforce Development**
- Workforce Connect
- Workforce analytics use cases
- CRM for commercial/industrial customers
- Office 365 & Microsoft Teams
- Smart City use cases

**Protect & Steward the Environment**
- ESRI GIS modernization
- Natural resources analytics
- Asset management analytics use cases
- Enhanced load forecasting
- Enhanced customer load profiling

**Resilience & Reliability**
- Advanced metering infrastructure
- Security & network operations center
- Cybersecurity program refinements
- Energy Imbalance Market
- Distribution automation
TPU Digital Business Roadmap

**2019 – 2020 Biennium**
- mytpu.org redesign
- Enhanced customer portal with preference center and self-service features
- Natural resources analytics
- ESRI GIS modernization
- Advanced metering infrastructure program delivery
- Refine cybersecurity program
- Asset management analytics use cases
- Customer analytics use cases
- Wide area network modernization
- Security & network operations center(s)
- Land mobile radio digital upgrades
- New TPU employee intranet
- Outage communications customer portal
- Deploy digital signage at TPU
- Office 365 & Microsoft Teams

**2021 – 2022 Biennium**
- CRM for commercial & industrial customers
- Enhanced customer load profiling
- Enhanced load forecasting
- Distribution automation
- Real-time connectivity modeling
- Enhanced customer load profiling
- Workforce analytics use cases
- Smart city use cases
- Enhanced social listening
- CRM web portal for joint pole usage

**2023 and beyond...**
- Enhanced customer load profiling
- Distribution automation
- Real-time connectivity modeling
- Enhanced social listening
- CRM web portal for joint pole usage

*Many of these initiatives span multiple strategic themes*
AMI Review
Advanced metering infrastructure

- Composite technology of meters, communications networks, and software systems that automated the collection of meter data and provides a two-way connection between customers and the utility
- Considered a mature technology based on industry standards
- Deployment costs have come down with improved security & reliability
- Over 70% of US electric meters have been upgraded to advanced meters and continues to grow
- A recent water utility survey has revealed that three quarters of US providers are planning to make AMI-based smart water investments in the next 24 months.
AMI Overview – selected vendors

- Power & Water Meters
- AMI Base Station(s)
- AMI headend system
- Customer Information System
  - SAP
- Meter Data Mgmt. System
  - UTegration
  - OMNETRIC (A Siemens Company)
### Status of AMI in the PNW

<table>
<thead>
<tr>
<th></th>
<th>Seattle City Light</th>
<th>Snohomish PUD</th>
<th>Puget Sound Energy</th>
<th>Clark Public Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>**AMI/Metering</td>
<td>RF mesh AMI from Landis+Gyr in deployment</td>
<td>AMI Business Case Approved</td>
<td>Next Generation AMI Deployment underway. RF mesh AMI from Landis+Gyr</td>
<td>AMR Completely installed. Drive by AMR from Itron</td>
</tr>
<tr>
<td><strong>Capabilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Portland General Electric</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMI/Metering</td>
<td>AMI Completed in 2010 RF star AMI from Sensus</td>
<td>AMI Completed in 2013 RF mesh AMI from Silver Spring Networks</td>
<td>AMR Completely installed. Power line carrier AMR from Aclara</td>
<td>RF mesh AMI from Itron</td>
</tr>
<tr>
<td><strong>Capabilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lakewood Water District</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMI/Metering</td>
<td>AMI Completed in 2015 RF Star AMI from Sensus</td>
<td>AMI Completed in 2014 RF star AMI from Sensus</td>
<td>AMI Completed in 2010. RF mesh AMI from Itron.</td>
<td>AMI Completed in 2010. RF mesh AMI from L+G.</td>
</tr>
<tr>
<td><strong>Capabilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Woodinville Water District</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMI/Metering</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Glendale Water &amp; Power</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMI/Metering</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>City of Anaheim Water &amp; Power</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
AMI governance structure
2018 Accomplishments

**Tier 1 and Tier 2 Business Processes**
- 20 sessions January through February
- 18 three hour sessions from September through November

**Three vendor selections**
- Completed the AMI, MDM, and SI vendor selection processes
- Requirements and RFP development
- RFP review: proposal sessions, shortlist presentations, interviews, and scoring

**Business Case Refresh**
- Develop business case narrative expressing the purpose, cost and benefits of AMI
- Reassessed and confirmed assumptions, costs, benefits, and calculations

**Organization Change Mgmt. Plan**
- Completed an organizational AMI alignment survey
- Drafted a stakeholder engagement and communications plan
- Developed internal and external messaging for talking points, web content, and responses to customers and community groups
# Program Schedule


<table>
<thead>
<tr>
<th>Quarter</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2 2017</td>
<td>Program Charter &amp; Governance Plan</td>
</tr>
<tr>
<td>Q1 2018 – Q3 2018</td>
<td>Define requirements and RFPs for AMI, MDMS, and Meter Installation Vendor</td>
</tr>
</tbody>
</table>

## 2019-2020: Systems Integration & AMI Network Deployment

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 2019 – Q4 2019</td>
<td>MDMS Implementation &amp; Systems Readiness</td>
</tr>
<tr>
<td>Q4 2018 - Q2 2020</td>
<td>AMI Network Deployment</td>
</tr>
</tbody>
</table>

## 2020 – 2021: Mass Meter Deployment

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2 2020</td>
<td>Complete AMI Network Deployment</td>
</tr>
<tr>
<td>Q2 – Q4 2020</td>
<td>Begin Meter Deployment (AMI Release 1)</td>
</tr>
<tr>
<td>Q1 – Q4 2021</td>
<td>Complete Meter Deployment (AMI Release 2)</td>
</tr>
</tbody>
</table>
Business Case Calibration
As AMI transitions from procurement to implementation TPU must recalibrate the AMI business case to accurately reflect known program costs and realized benefits.

The next comprehensive AMI Business Case calibration will occur in the mid-2020 timeframe as the program transitions from implementation to deployment.
### Business case assumptions

<table>
<thead>
<tr>
<th>Updated program costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• AMI meters and network</td>
</tr>
<tr>
<td>• Meter data mgmt. system</td>
</tr>
<tr>
<td>• System integration</td>
</tr>
<tr>
<td>• Program support</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Refined benefits analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Inclusion of monthly billing</td>
</tr>
<tr>
<td>• Inclusion of carbon reduction</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Updated asset replacement methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Revised water meter replacement strategy based on updated meter replacement vs. retrofit costs.</td>
</tr>
<tr>
<td>• Updated installation costs associated based on recent field survey analysis.</td>
</tr>
</tbody>
</table>
AMI business case scope

- Installation of approximately 180,000 electric meters and 110,000 water meters
- Installation of the AMI network
- Implementation of a meter data management system
- AMI to SAP integration
- Transition to monthly billing
- Deployment of a customer usage portal
- All applications and functionality associated with Phase 1 and 2 of the AMI roadmap
New AMI customer benefits

**Value my time**
- Improved outage and system restoration times
- Advanced water leak detection capabilities
- Remote turn-on/turn-off
- Advanced self-service capabilities

**Value my money**
- Automated billing
- Monthly billing
- Prepayment options
- Selectable bill date
- Detailed usage information

**Value me**
- Lower cost of service model
- Reduction of manual processes
- Paperless billing capabilities
- Demand response capabilities

**Value my preferences**
- Near Real-time usage information
- Alerts and notifications
- Billing and payment notifications
- Conservation options
- Multi-channel capabilities

TPU Customers
AMI Customer Benefits Roadmap

Updated January 3, 2019

**Phase 1: Delivered Functionality**

To be completed by end of 2021

1. Basic meter to bill
2. Basic meter data reporting
3. Monthly billing
4. Customer meter options policy
5. Support for existing manual prepay process

1. Enhanced customer portal
2. Consumption data available via new portal

1. Remote meter reading
2. Remote disconnect/reconnect
3. Automated service order creation

**Phase 2: Delivered Functionality**

To be rolled out between 2021 and 2023

1. Enhanced prepay functionality (via customer portal)

1. Enhanced outage notifications
2. Abnormal consumption notifications
3. Emergency water leak notifications

1. Asset analytics use cases
2. Engineering analysis & systems planning use cases
3. Enhanced voltage monitoring
4. Revenue protection

**Enabled Functionality**

Features enabled by AMI not in program scope
To be prioritized after 2023

1. New real-time rate models
2. Support for multi-service prepay (water, sewer, trash)
3. Choose your own bill date
4. Enhanced SAP contact center tools via CIC upgrade
5. Enhanced demand & load forecasting
6. Enhanced grid & outage mgmt. operations
7. Distribution automation
8. Smart City integration

**Customer Benefits Key**

- Reliability & Resiliency
- Billing & Payment
- Convenience
Measurable AMI benefits

- For Tacoma Water & Tacoma Power
- Benefits are based on industry benchmarks
- Labor-meter reading benefit assumes the transition to monthly billing

<table>
<thead>
<tr>
<th>Benefit</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor-Meter Reading</td>
<td>$56.72M</td>
</tr>
<tr>
<td>Labor-Call Center</td>
<td>$5.04M</td>
</tr>
<tr>
<td>Meter Replacement</td>
<td>$8.42M</td>
</tr>
<tr>
<td>Asset Management</td>
<td>$4.82M</td>
</tr>
<tr>
<td>Carbon Reduction</td>
<td>$2.69M</td>
</tr>
<tr>
<td>Reduced Write-offs</td>
<td>$2.51M</td>
</tr>
<tr>
<td>Reduced Energy Losses</td>
<td>$2.46M</td>
</tr>
<tr>
<td>Avoided Truck Rolls</td>
<td>$2.55M</td>
</tr>
<tr>
<td>Leak Forgiveness</td>
<td>$0.10M</td>
</tr>
<tr>
<td>Reduced Outage Duration-SAIDI</td>
<td>$0.01M</td>
</tr>
</tbody>
</table>

**Total NPV of Quantifiable Benefits** $85.61M

This is a conservative benefit analysis that does not incorporate significant customer “soft” benefits associated usage information, self-service applications and system and account notifications.
Program deployment cost

- AMI Costs are based on the following:
  - Contracted vendor pricing
  - Transition to monthly billing
  - Updated asset replacement strategy
- Costs include additional TPU staffing and contractors

<table>
<thead>
<tr>
<th>Program Element</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric Meter Deployment</td>
<td>$30.7M</td>
</tr>
<tr>
<td>Water Meter Deployment</td>
<td>$11.8M</td>
</tr>
<tr>
<td>AMI Communications Network Deployment</td>
<td>$1.7M</td>
</tr>
<tr>
<td>Systems Integration and Meter Data Management Implementation</td>
<td>$7.7M</td>
</tr>
<tr>
<td>Planning, Procurement, and Program Management Support</td>
<td>$7.1M</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtotal</td>
<td>$70.0M</td>
</tr>
<tr>
<td>Contingency</td>
<td>$10.7M</td>
</tr>
<tr>
<td><strong>Total Deployment Cost with Contingency</strong></td>
<td><strong>$80.7M</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biennium Costs</th>
<th>2017-18</th>
<th>2019-20</th>
<th>2021-22</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$1.54M</td>
<td>$21.9M</td>
<td>$46.6M</td>
</tr>
</tbody>
</table>

*Note: Biennium costs exclude contingency*
Financial summary

- AMI Return on Investment:
  - W/ Contingency = $(649,967)
  - W/o Contingency = $10,080,705

- AMI Costs are based on the following:
  - Contracted vendor pricing
  - Transition to monthly billing
  - Updated asset replacement strategy

- Costs include additional TPU staffing and contractors

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Expenses (NPV)</td>
<td>$61.4M</td>
</tr>
<tr>
<td>O&amp;M Expenses (NPV)</td>
<td>$14.2M</td>
</tr>
<tr>
<td>Electric Benefits</td>
<td>$58.7M</td>
</tr>
<tr>
<td>Water Benefits</td>
<td>$23.9M</td>
</tr>
<tr>
<td>Carbon Reduction Benefits</td>
<td>$3.0M</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NPV w/o Contingency</td>
<td><strong>$10.1M</strong></td>
</tr>
<tr>
<td>Contingency</td>
<td><strong>$10.7M</strong></td>
</tr>
<tr>
<td>NPV w/ Contingency</td>
<td><strong>$-0.65M</strong></td>
</tr>
</tbody>
</table>
Solution Providers
Selected AMI vendors & contracts

- **Sensus** *(AMI meter and network provider)*
  - Hardware Statement of Work

- **Omnetric** *(Meter Data Management System)*
  - Implementation Statement of Work

- **Utegration** *(System Integrator)*
  - Implementation Statement of work

- **Z2 Solutions** *(Program Advisor)*
  - Contract Amendment
### Vendor components

<table>
<thead>
<tr>
<th><strong>Advanced Meter Infrastructure (AMI)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• AMI power and water meter supplier</td>
</tr>
<tr>
<td>• Meter communication network infrastructure</td>
</tr>
<tr>
<td>• Head-end System (HES) system to manage the RF network and collect data from the meters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Meter Data Management System (MDMS)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• System of record for all meter data</td>
</tr>
<tr>
<td>• Collects and converts raw meter data into meaningful information of other systems</td>
</tr>
<tr>
<td>• Collects, processes, sends billing determinants</td>
</tr>
<tr>
<td>• Synchronizes with CIS (Customer Information System) and maintains synchronization of AMI</td>
</tr>
<tr>
<td>• Collects and analyzes meter events and alarms</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>System Integrator (SI)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Configure and build the system integrations between the AMI HES, MDMS and SAP</td>
</tr>
<tr>
<td>• Orchestrates Blue Print workshops to capture SAP business and configuration workshops</td>
</tr>
<tr>
<td>• Coordinates and manages integration testing and user acceptance testing</td>
</tr>
<tr>
<td>• Coordinate go live and post go live support</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Meter Installation Vendor (MIV) - TBD</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Manages the warehousing and installation of the AMI meters</td>
</tr>
<tr>
<td>• Delivers installation data to TPU's systems</td>
</tr>
<tr>
<td>• Provides customer service for installation appointments and claims</td>
</tr>
</tbody>
</table>
Vendor selection approach

• Engaged consultant to facilitate our vendor selection process
• The selection panels were comprised of key SME’s across TPU and City IT
• Vendors were equally evaluated via competitive RFP process

Selection process

1. General and Solution Requirements
2. Shortlist Selection
3. Vendor Presentations
4. Reference Interviews
5. Award!
AMI meter & network vendor

- Power & Water Meters
- AMI Base Station(s)
- AMI head-end system
  - Power & Water Meter Supplier
  - Meter Communication Network Infrastructure
  - Head-end System (HES) data collector
  - Sandbox Deployment

Customer Information System

Meter Data Mgmt. System

SAP

Integration

OMNETRIC

A Siemens Company
Best water meter support
Best network and communications
Solid electric support
Strong network coverage
Robust distribution automation capability
Strong project team/methodology
Lowest price
## Sensus contract

<table>
<thead>
<tr>
<th>Contract Component</th>
<th>Description</th>
<th>Price</th>
<th>Target PUB Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Service Agreement (MSA)</td>
<td>General Terms and Conditions</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Sandbox Statement of Work</td>
<td>Implementation of a test/non production environment</td>
<td>$185,000</td>
<td>TBD</td>
</tr>
<tr>
<td>Hardware Statement of Work</td>
<td>Meter and network infrastructure</td>
<td>$33,000,000</td>
<td>1/23</td>
</tr>
<tr>
<td>Implementation Statement of Work</td>
<td>Professional services for implementing the AMI system</td>
<td>$642,500</td>
<td>1/23</td>
</tr>
<tr>
<td>Software as a Service (Saas) Statement of Work</td>
<td>Network and system management</td>
<td>$1,326,000</td>
<td>1/23</td>
</tr>
<tr>
<td>Spectrum SOW</td>
<td>Network licensing agreement</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Total Contract Value</strong></td>
<td></td>
<td><strong>$35,153,500</strong></td>
<td></td>
</tr>
</tbody>
</table>
**Meter Data Management System**

- **AMI head-end system**
- **Customer Information System**
- **Power & Water Meters**

- System of record for meter data
- Collects and converts raw meter data into meaningful information of other systems
- Collects, processes, sends billing determinants
- Collects and analyzes meter events and alarms.
- Synchronizes with SAP and maintains synchronization of AMI
✓ Solid methodology
✓ Robust security and support
✓ Best-in-class system architecture
✓ Best functionality
✓ Experienced project team
✓ Excellent references
✓ Lowest price
## Omnetric contract

<table>
<thead>
<tr>
<th>Contract Component</th>
<th>Description</th>
<th>Price</th>
<th>Target PUB Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Service Agreement</td>
<td>General Terms and Conditions</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Sandbox Statement of Work</td>
<td>Implementation of test/non-production environment</td>
<td>$90,482</td>
<td>1/23</td>
</tr>
<tr>
<td>Implementation Statement of Work</td>
<td>Implementation and integration of the MDMS</td>
<td>$1,168,452</td>
<td>1/23</td>
</tr>
<tr>
<td>Software License</td>
<td>MDMS Licenses</td>
<td>$50,000</td>
<td>TBD</td>
</tr>
</tbody>
</table>

**Total Contract Value**  
$1,308,934
<table>
<thead>
<tr>
<th>Systems Integrator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Orchestrates blueprint workshops to capture SAP business processes &amp; configurations</strong></td>
</tr>
<tr>
<td><strong>Coordinates and manages integration testing and user acceptance testing</strong></td>
</tr>
<tr>
<td><strong>Coordinate go live and post go live support</strong></td>
</tr>
<tr>
<td><strong>Configure &amp; build the system integrations between AMI, HES, MDMS, and SAP</strong></td>
</tr>
</tbody>
</table>

**Utegration**
(System Integrator)
Utegration

- Strongest team
- Excellent reference checks
- Proven project methodology
- Significant municipal and combination utility experience
- Best minimum requirements score
- Good overall compliance requirements
- Strong SAP knowledge
- Local presence
## Utegration contract

<table>
<thead>
<tr>
<th>Contract Component</th>
<th>Description</th>
<th>Price</th>
<th>Target PUB Meeting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master Service Agreement</td>
<td>General Terms and Conditions</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Implementation Statement of Work</td>
<td>Integration services</td>
<td>$3,885,804</td>
<td>1/23</td>
</tr>
</tbody>
</table>

**Total Contract Value** $3,885,804
Scope of additional services:

• Meter and network deployment management support
• Stakeholder engagement and OCM services
• Systems integration advising services
• Program management support

Contract amendment request: $800,000
### AMI contract proposal summary

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensus (AMI Vendor)</td>
<td>Hardware Statement of Work</td>
<td>$33,000,000</td>
</tr>
<tr>
<td>Omnetric (MDMS Vendor)</td>
<td>Implementation Statement of Work</td>
<td>$1,308,934</td>
</tr>
<tr>
<td>Utegration (System Integrator)</td>
<td>Implementation Statement of Work</td>
<td>$3,885,804</td>
</tr>
<tr>
<td>Z2 Solutions (Program Advisor)</td>
<td>Contract Amendment</td>
<td>$800,000</td>
</tr>
</tbody>
</table>
Updated resolution – special project of limited duration

- Transition from procurement to implementation phase
- Staffing needs for temporary and special project positions
- Tonight’s session for approval
Customer Communications & Outreach Planning
Communications & outreach strategies

- Provide ongoing messaging updates to leadership, employees and customer-facing materials
- Highlight customer benefits and value
- Coordinate messaging timelines with project phases
- Use all available marketing channels as well as community and stakeholder relationships for outreach, similar to our rates process
Communications & outreach timeline

• 2018
  • Developed message map and confirmed customer benefits
  • Updated web content and FAQs
  • Provided talking points to leadership and outreach staff
  • Responded to customer and community group questions

• 2019/2020
  • Q1: Finalize 2019-2020 biennium Communications & Outreach Plan
  • Q2: Early communications of project timelines
  • Q3: Deployment communications to test group
  • Q4-Q1: Deployment communications to larger community
Summary

- How AMI provides the digital foundation to enhance the customer experience
- Refresher on AMI technology
- Reviewed calibrated business case
- Provided an overview of selected solution providers
- Preparation for contract approvals during upcoming PUB meetings
Questions