

A Fully Web-Based Cross Connection Control Program

How TVWD Made the Leap

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Delivering the Best Water 💧 Service 💧 Value

Presentation Outline



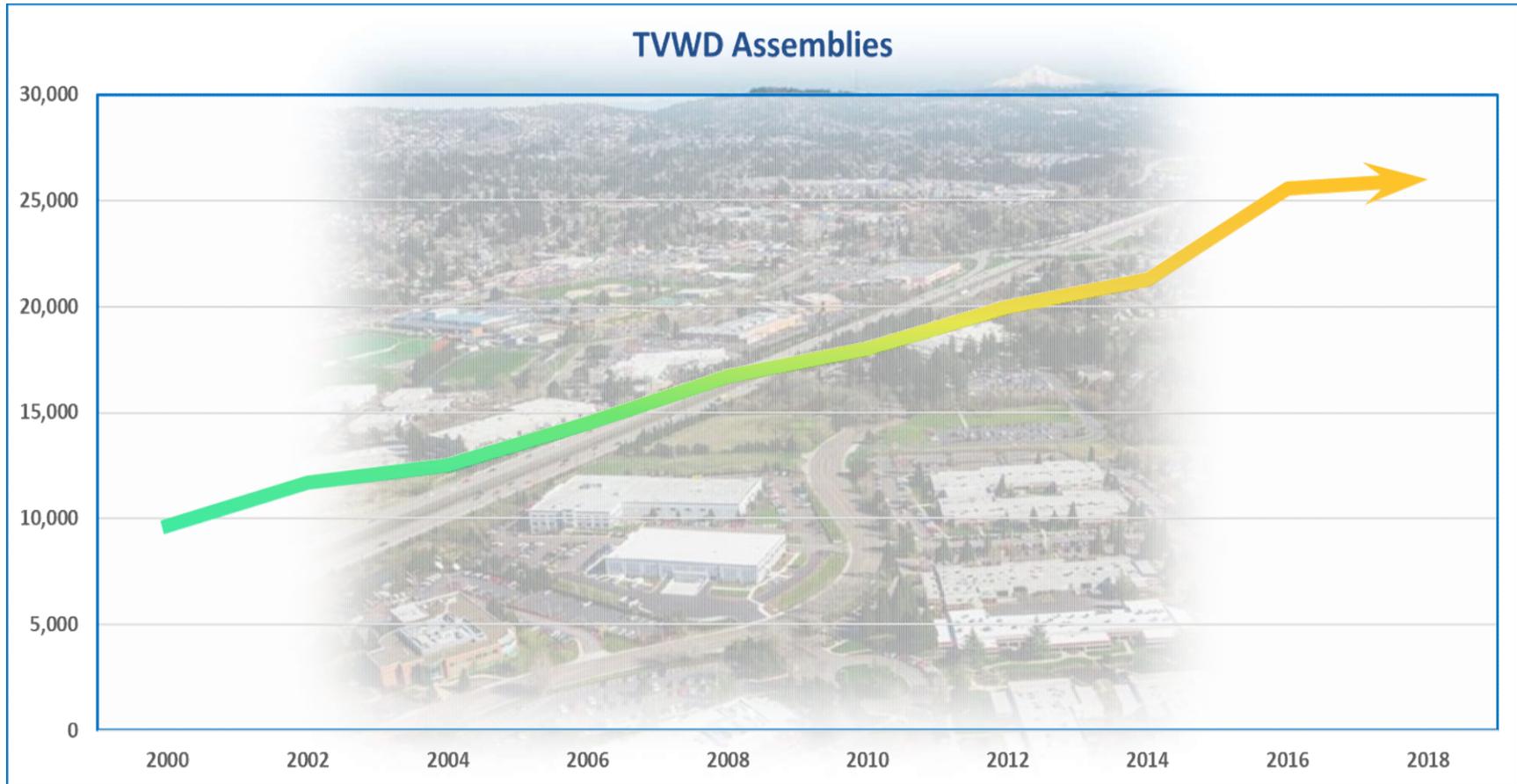
- TVWD – Background
- Project Drivers
- Development of Project Plan
- 2017 – 2018: Phased Implementation
- After Action Report and Next Steps

Tualatin Valley Water District

- Population served: 215,000 –230,000
- 131 full time employees
- 23 storage reservoirs, 62 MG of storage, 750 miles of pipe
- FY 2018: 8.5 billion gallons



Cross Connection Control Program



TVWD's "Gold Plan" Backflow Testing Subscription

- **Gold Plan Basics**
 - \$35 charge per assembly
 - Initially based on existing UB systems
 - No hassle service courtesy of TVWD
 - \$50 credit towards repairs

Annual Subscription

Project Drivers Timeline

- **2009** – Automated backflow testing (Gold Plan, enforcement)
- **2011** – Began exploring software applications
- **2015** – Embarked on replacement process
- **2016** – Rebooted project

BACKFLOW ASSEMBLY TEST REPORT

PROPERTY OWNER: _____ PHONE: _____

MAILING ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

ASSEMBLY ADDRESS: _____ STREET: _____

R.P.B.A. D.C.V.A. R.P.D.A. D.C.D.A. F.V.B.A. S.V.B.A. A.V.B. AIR GAP

SIZE: [] [] [] MAKE: _____ SERIAL: _____ MODEL: _____

WATER PURVEYOR: _____ SERIAL NUMBER: _____

ASSEMBLY LOCATION: _____

REDUCED PRESSURE ASSEMBLY	DOUBLE CHECK	F.V.B.A. / S.V.B.A.	AIR INLET	INITIAL TEST
<input type="checkbox"/> CHECK <input type="checkbox"/> PRESS DROP <input type="checkbox"/> INITIAL PRESS VALVE <input type="checkbox"/> TEST	<input type="checkbox"/> CHECK #1 <input type="checkbox"/> CHECK #2 <input type="checkbox"/> CHECK #3 <input type="checkbox"/> CHECK #4	<input type="checkbox"/> AIR INLET <input type="checkbox"/> CHECK	<input type="checkbox"/> OPENED AT <input type="checkbox"/> PRESS DROP <input type="checkbox"/> DATE:	<input type="checkbox"/> PASSED <input type="checkbox"/> FAILED
<input type="checkbox"/> BUFFER <input type="checkbox"/> RELIEF VALVE <input type="checkbox"/> PASS <input type="checkbox"/> FAIL	<input type="checkbox"/> TIGHT <input type="checkbox"/> LEAKED <input type="checkbox"/> PRESS	<input type="checkbox"/> DID NOT <input type="checkbox"/> OPEN <input type="checkbox"/> FAILED <input type="checkbox"/> SYSTEM	<input type="checkbox"/> PRESS DROP <input type="checkbox"/> DATE:	<input type="checkbox"/> PASSED <input type="checkbox"/> FAILED

COMMENTS: _____

GAUGE CALIBRATION DATE: _____ DETECTOR METER READING: _____

TESTER SIGNATURE: _____ TESTER NAME PRINTED: _____ TESTER ADDRESS: _____ COMPANY NAME: _____

REPORT RECEIVED BY: _____ (REPRESENTATIVE OF OWNER) SERVICE RESTORED

WHITE - Water System Copy PINK - Customer Copy YELLOW - Tester Copy

25,000 individual paper test reports, all manually entered into legacy system

2015 – What Happened?



- Since 2011, co-developed 'pilot' software with local developer
- Good product, but...
- High degree of uncertainty
- User agreement needed

After Management and staff input, stopped project to reevaluate business case

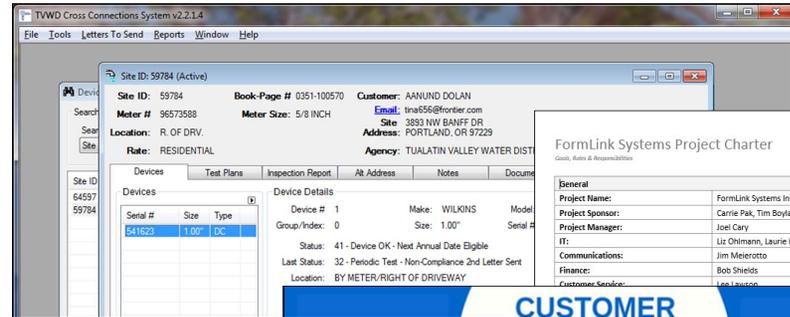
2016 – Project Reboot

Cross Connection Software Solutions	Aqua Backflow	XC2 Software	FormLink Systems	BPMS	Tekny Software	BMI	Ambitec	BSI	GCS Solutions	AnchorSafe	Ventura County	EWEB	SEMS Technologies	AcGS
Website	www.aquabackflow.com	www.xc2software.com	www.formlinksystems.com	http://bpms.net	www.tekny.com	www.bmi-backflow.com	www.ambitec.com	http://www.bsiprograms.com/backflow/backflowindex.html	http://www.gcs-solutions.net/	http://www.anchorSAFE.com/	Accella	Internally developed	https://www2.semstechnologies.com/	http://solutions.atcgis.com/utilities/water/help/backflow/inspect/
Water Supplier Oriented	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
DECISION POINT	STOP													
Subscription Model	Yes	Yes	Yes	Yes	Unknown	Yes	Unknown	Yes		Unknown	Unknown	No	Unknown	Yes
Cost	\$ 30.00	Unknown	\$ 150.00	Unknown	Unknown	Unknown	Unknown	\$ 495.00		Unknown	Unknown	Unknown	Unknown	Unknown
Remote Data Entry	Yes	Yes	Yes	No	Yes	No	No	Yes		Yes	Yes	Yes	No	No
DECISION POINT	STOP													
Portal or App Based	Portal	Portal	Portal	STOP	Portal	STOP	STOP	Portal		Both	Both	Portal	STOP	STOP
Fee per Test	Unknown	Unknown	Yes		Unknown			Yes			No	No		
Cost	Unknown	Unknown	\$ 1.00		Unknown			\$ 12.35		\$ 3.35	\$ -	\$ -		
System Architecture	Unknown	Access	Web-based		Access			Web-based		Web-based	Accella	Custom		
DECISION POINT	STOP													
Notification & Letter Support			Yes					Yes		Yes	Yes	Yes		
Compliance Reporting			Yes					Unknown		Yes	Yes	Yes		
Integration w/ Billing Systems			Yes					Unknown		Yes	Unknown	Yes		
Tester Tracking			Yes					Yes		Yes	Yes	Yes		
Automated Testing Program Function			No					No		No	No	Yes		
Customer Testimonials			Yes					Yes		Yes	Yes	No		
Notes			Lowest costs; excellent user interface; limited but strong customer testimonial.					Lack of control for Water Purveyor and highest per test costs are significant negatives.		Moderate to high costs based on test fee; excellent user interface and customer testimonials; both portal and app based usage.	Custom designed system by Accella and City Gov Apps; may not be economically feasible for TVWD use.	Custom design by EWEB; not web-based and likely needs significant internal IT support. Tester comments indicate not user friendly.		
DECISION	STOP	STOP	GO	STOP	STOP	STOP	STOP	NEUTRAL	STOP	GO	NEUTRAL	NEUTRAL	STOP	STOP

2016 – Project Elements

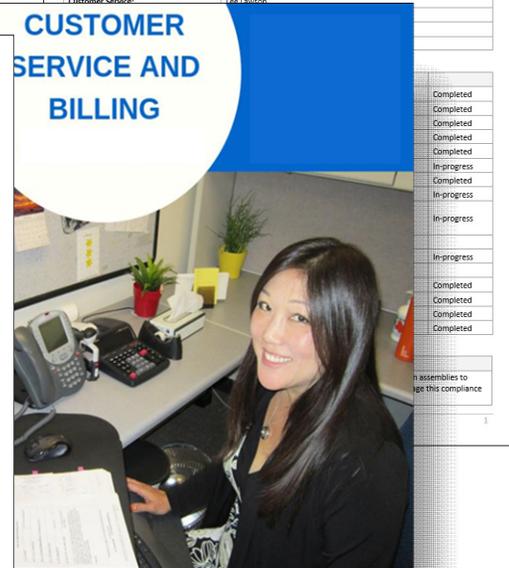
- **Key Steps**

- **Step 1** – Assessed current system
- **Step 2** – Issued RFP
- **Step 3** – Project charter (team and roles)
- **Step 4** – Planning and design (e.g., impacts, engagement, data fields, API)
- **Step 5** – Deployment



FormLink Systems Project Charter

General	
Project Name:	FormLink Systems Integration
Project Sponsor:	Carrie Pak, Tim Boylan
Project Manager:	Joel Cary
IT:	Liz Ohlmann, Laurie Hannon
Communications:	Jim Meierotto
Finance:	Bob Shields
Customer Service:	Max Swanson



Completed
In-progress
Completed
In-progress
Completed
In assemblies to age this compliance

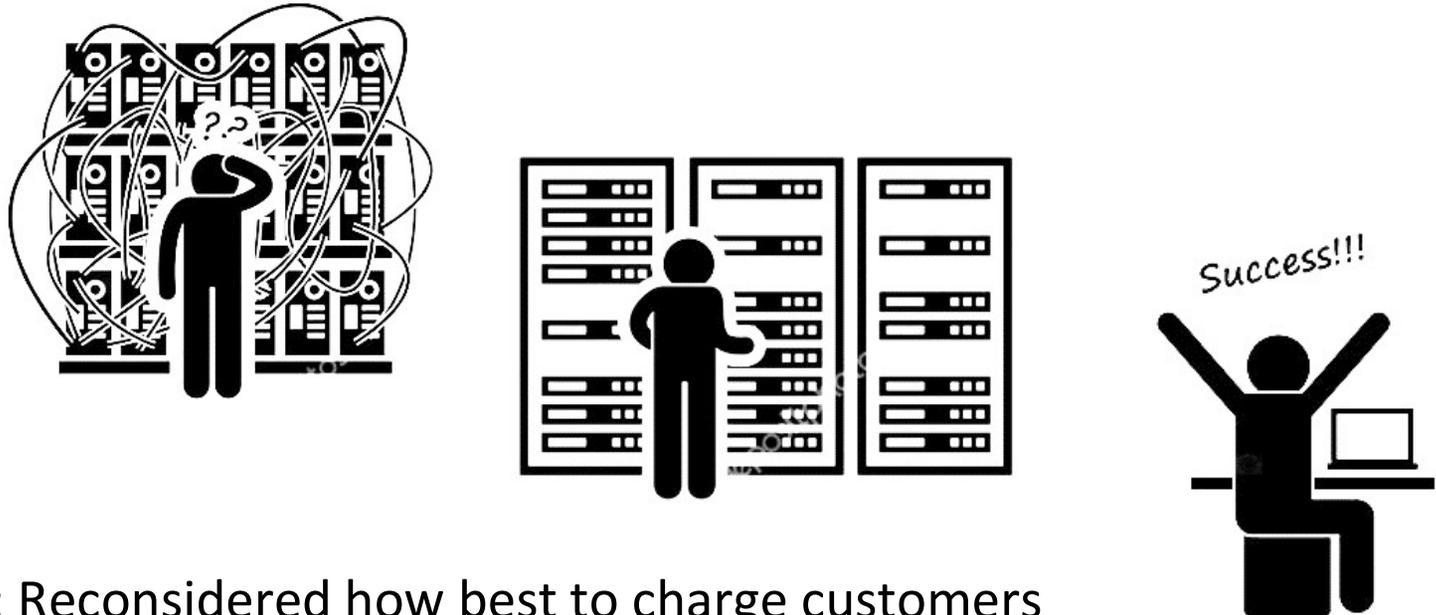
2016 – Vendor Selection



- **Critical Requirements**
 - Web based
 - Electronic means of data entry (i.e., no more paper!)
 - Field tested, real world deployment
 - Controlled, secure access
 - Easy to use

Planning & Design: Thinking About the Big “Information Technology” Picture

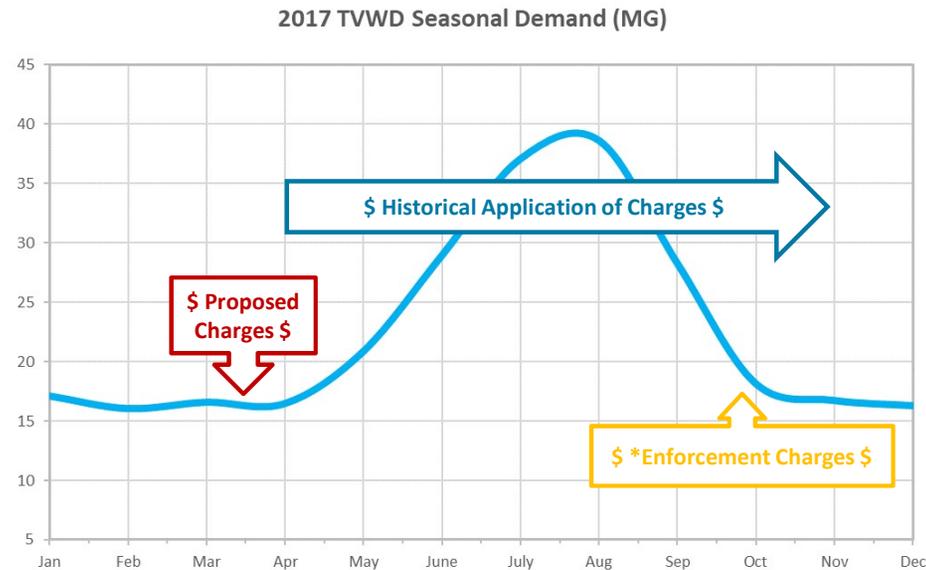
- Goals: Reduced complexity – less network development



- Example: Reconsidered how best to charge customers
- Staging for Utility Billing system replacement (CIS)

Planning & Design: Timing of Gold Plan Charges

- Offset from peak billing – move to once annual



- Benefits?
 - Customer oriented, reduces IT resources, streamlines program administration

Deployment Strategy

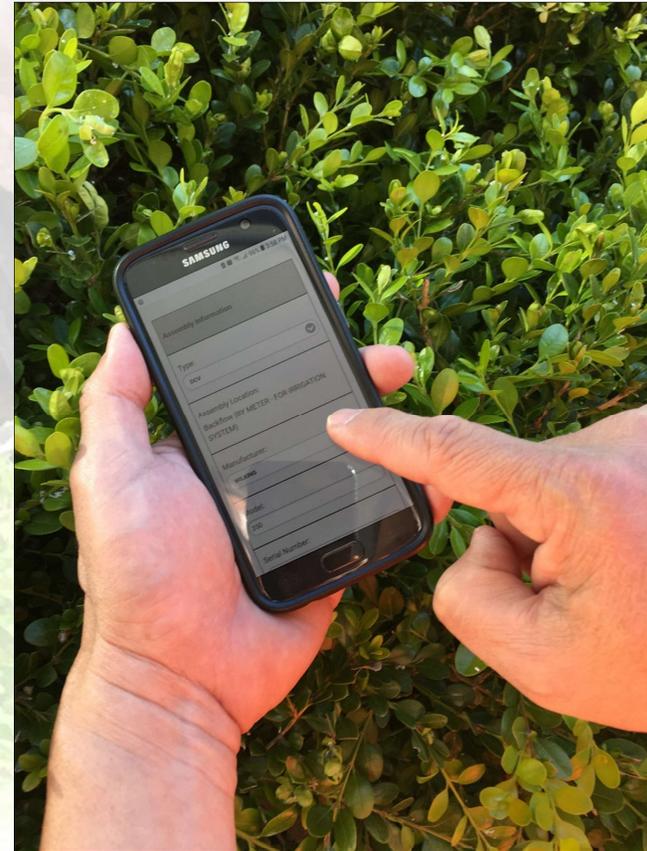
- **2017** – Rolled out new software for Gold Plan testing (8000 subscribers)

- **2018** – Full scale, District wide deployment



2017 – Phase 1 Deployment

- **Q1** – Data conversion, team meetings, system access
- **Q2** – Rolled out new software for Gold Plan testing program – 15 contracted testing companies
- **Q3-Q4** – TVWD ‘Beta’ testing period



2018 – Phase 2 Deployment

- **Q1** – Training for testing community, targeted notification
- **Q2** – District wide deployment
 - Over 170 testing company profiles logged in system



After Action Report

- **What went right?**

- Phased approach
- Tester training and system usage
- Vendor responsiveness
- Customer response (or lack thereof)
- Board support
- Flexible solutions

- **What could have been better?**

- Staff training
- User overlap of two databases

Fully Realized Benefits To-Date

- **100% controlled access** – Only up-to date testers can access the system
- **Allocation of staff time** – No more paper records or time consuming data entry, IT resources freed up
- **Accuracy** – Improvements in data going in, reduction in submitting reports to wrong agency
- **Progress** – Frankly, it just feels good to be leading the way!

**The Project and Program teams were critical to the success
of this effort!**

Questions?

Thank you