Developing an Internal Business Plan in Multi-Service Agencies Such as a City or County

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City of Tigard

- City in Washington County, Oregon
- Water Division is part of Public Works
  - 60,000 people
  - 17,800 connections
  - 12.8 square miles
- Water System
  - 5 Major Service Zones
  - 14 Storage facilities
  - 7 Pump Stations

Tigard's Operational History

- City of Tigard takes over Tigard Water District by withdrawal in 1994
- City had no knowledge/experience with water systems
- Takeover was "somewhat hostile"
  - Integration of "Water" division into the City's culture was difficult and not well planned
- Large amount of knowledge was lost in the transfer, including records and files

Earlier Efforts to Improve

- Some work on “Best Management Practices”
- Mixed reviews because it
  - Was performed “in house”
  - Used a “voting system” that produced unreliable results
- Little “buy-in” from stakeholders

Why a Business Plan for Field Operation and Maintenance Activities?

Questions we wanted to answer

- Which operational and field maintenance activities and tasks had priority?
- What field activities and tasks coincided with effective Water Utility Management?
- How can we prioritize *identified* field activities and tasks to utilize employee resources better?
- Who needs to participate to help develop the plan and have a better understanding of how we prioritize and use resources?

Why not just update the old BMP* activity list internally?

- Hard to facilitate the project and participate as a player at the same time
- Needed outside validation, especially regarding additional staffing resources
- Needed a fresh approach and real success in developing the program and creating a team approach to solving (resource) problems

*Best Management Practices

What was Tigard Looking for in this Project? - 1

- Create work team of manager, supervisor, senior utility workers, utility billing administrative staff, and water quality staff
- Create interactive process that produced results and understanding of each activity and prioritized importance

What was Tigard Looking for in this Project? - 2

- Identify activities and tasks related to operating and maintaining water distribution system, including
  - Field activities (valve maintenance, meter maintenance, meter reading, etc.)
  - Water quality monitoring and reporting
  - Utility billing

What was Tigard Looking for in this Project? - 3

- Prioritize activities using consistent criteria
- Identify and develop SOPs (Standard Operating Procedures)
- Identify performance measures, especially for repetitive tasks, such as valve maintenance

Major Work Activities

1. Project Chartering
   - Kick-off Meeting
   - Large Group Meeting
2. Program Identification and Prioritization
   - Working Group Meetings – series of 3
3. Project Summary
   - Large Group Meeting
   - Summary Memo

Kick-off Meeting

Starting Points

- Tigard Water Division is already a very good utility
- Leadership is looking for ways to make it even better
- May be more we can do to improve service to our customers
- Water Utility is in good financial condition, but supply of money is limited

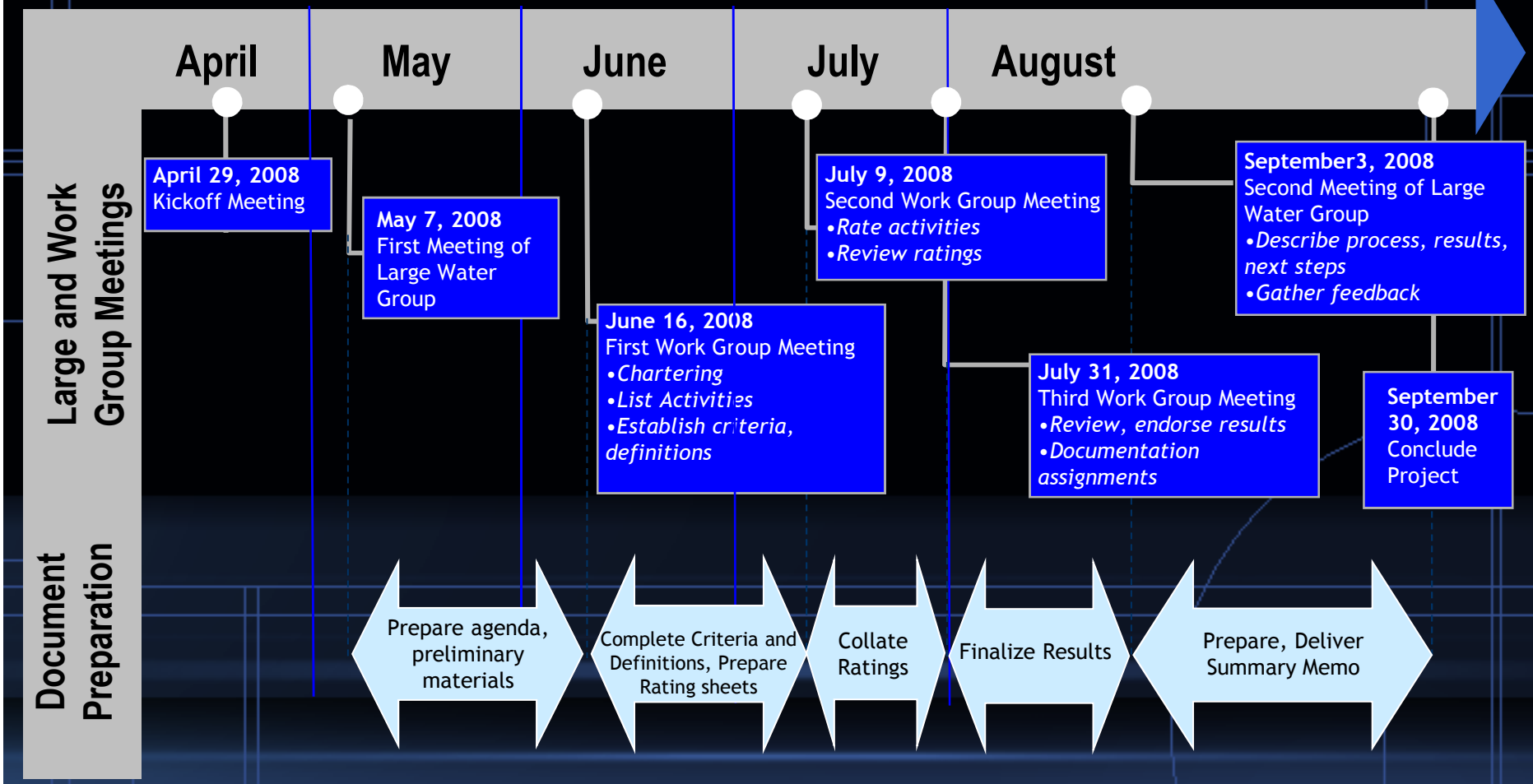
Tigard Water Division's Circumstances

- Performs a lot of interrelated functions
  - Need to understand how they're interrelated
- Need to substantiate budget requests and rate increase proposals
- Looking for ways to communicate the good work the Water Division is doing
- Must prepare for the future and assure continued good service

Leadership Goals for the Project

1. Document Water Division programs (current and possible additions) to facilitate documentation of work activities in later phase
2. Establish priorities for Water Division programs
3. Develop mutual understanding of interrelationships among Water Division programs

Project Schedule



Hierarchy of Terms

Vision → Mission → Values → Goals/Strategies/ Objectives → Programs → Activities

BMPs
- 10 attributes
- QualServe Standards
- APWA Accreditation

Programs
- Water Supply
- Water Quality
- Distribution System Maintenance
- Administration
- Customer Service
- Capital Improvement

Activities
- Well and Master Meter Maintenance
- Water Quality Sampling
- Pump Station Maintenance

Tasks
- Records specified information at designated intervals
- Collect water samples, send to lab, report results
- Measure motor performance parameters

Identify Work Activities

- 75 to start
- AWWA, APWA checklists
- Being done, planned, new
- Grouped into 8 Water Division Programs
  - Engineering, Public Works Activities set aside

WATER SUPPLY O&M
DISTRIBUTION O&M
METER PROGRAM
WATER CONSERVATION
MANAGEMENT
Utility Billing
WATER QUALITY
CROSS CONNECTIONS
EOC
MIKE LUECK
ELECTRIC

Work Activities

Categories	
Distribution System O&M	Meter Program
Water Supply O&M	Utility Billing
Management	Cross Connection
Water Quality	Water Conservation

Tigard Water Division Work Activities

Distribution O & M	Water Supply O & M	Management	Water Quality	Meter Program	Utility Billing	Cross Connections	Water Conservation	Engineering	Public Works
Customer Service	Customer Service	Customer Service	Customer Service	Customer Service	Customer Service	Customer Service	Customer Service	Customer Service	Customer Service
Scheduled Maintenance	Energy Management	Water Loss Monitoring/Reduction	Water Quality Monitoring	Meter Maintenance- All meters	Meter Reading	Backflow Protection/Cross Connection Control	Conservation Program	Design Review (including water quality)	Vehicle/Equipment Maintenance
Distribution System Flushing: Unidirectional	Reservoir O&M	Asset Management	Aesthetic Water Quality	Meter Replacement (1-1/2" and 2")	Fire Hydrant Meters			Pipeline Rehab & Replacement	Grounds/Building Maintenance
System Flushing: Blow-off & Dead End Lines	Pump Station O&M	Budget Development	Wellhead Protection	Meter Replacement (3/4" to 1")	Fire Service Detector Meters			Vulnerability Assessment	Corporate Yard (by Property Division)
Valve Exercising/Repair/ Replacement	Purchased Water Supply Controls O&M	Department Capital Maintenance Program	Public Education Program	Meter Testing				Inspection Schedule	Hanson Inventory
Fire Hydrant Maintenance/Testing	Groundwater Wells and ASR Wells O & M	Board/Council Support		Meter Testing (3" or larger)				Private Development - Plan review, inspection	
Unscheduled Maintenance	Security O&M	Management/ Regional		Water Meter Repairs				City CIP, Group Together	
Utility Locates	PRV Maintenance and Repair	FTE (Staffing Requirements)		Water Meter Customer Emergency Shut-off				Hanson/Mapping/Data Collection	
Fire Hydrant Damage Repair	SCADA O&M	Staff Training		Regulator Repairs (Service Side)				New Fire Hydrants	
Water Main Leak Repair		Standards for data/reports to be used in Annual Water Division report.						Reservoir Painting/Repair	
Service Line Repair/ Replacement		Emergency Response Planning/Preparedness						Pipeline Replacement	
Blow-off Replacement								Fire Hydrant Replacement	
Other CIP-Related Maintenance Work									
Fire Flow Testing (Monitor contactor during test)									
Scheduled CIP Work									
Water Main Installations									
Service Line Installations									
Water Meter Installations									
Sampling station replacement/upgrade									

Evaluation Criteria

1. Regulatory/Statutory Compliance
2. Product Quality
3. Infrastructure Health/Condition
4. Customer Impression/Confidence
5. Financial Effects
6. Employee Impact
7. Fire Suppression

Tigard Business Plan Development Project

Evaluation Criteria and Descriptors			
	Preferred State		
Criteria/Rating	Significant Value = 5	Moderate Contribution = 3	Little/No Contribution = 1
Regulatory/Statutory Compliance	Required by State or Federal Authority	Required by City Ordinance/Policy/Rule OR, sets the stage for future need	No external requirement
Product Quality	Critical to high quality water	Contributes to high quality water	No effect
Infrastructure Health/Condition	Improves multiple assets Proactive maintenance	Improves one infrastructure component Reactive maintenance	No improvement
Customer Impression/Confidence	Sustains delivery of water meeting water quality standards AND at acceptable pressures	Improves perceived quality OR improves service pressure	No direct impact
Financial Effects	Reduces direct cost to customers, immediate cost savings	Minor reduction in overall utility cost, lowers risk of higher future cost, or reduces capital requirement	No cost savings
Employee Impact	Eliminates activity that is repetitive, time-consuming, or low value	Reduces activity that is repetitive, time-consuming, or low value	No help
Fire Suppression	Critical for delivery of water for fire suppression	Contributes to delivery of water for fire suppression	No direct impact

Working Group Process

- Confirmed similarity of scope, scale
  - Weeded out tasks
  - 50 work activities identified
- Rated All Activities
  - Each activity against every criterion
  - Open discussion, no votes
- Review Results – Validate Basis and Priority

TIGARD WATER DIVISION

WORK ACTIVITY EVALUATION

WORK ACTIVITIES	REGULATORY/STATUTORY COMPLIANCE	PRODUCT QUALITY	INFRASTRUCTURE HEALTH/CONDITION	CUSTOMER IMPRESSION/CONFIDENCE	FINANCIAL IMPACTS	EMPLOYEE IMPACT
1 Distribution O&M						
Scheduled Maintenance						
a System Flushing - Unidirectional 6, 8, 12 & 16 inch						
b System Flushing - Blow-off & Dead end lines						
c Valve Exercising/Repair/Replacement						
d Fire Hydrant Maintenance/Testing						
Unscheduled Maintenance						
a Customer Service						
b Utility Locates						
c Fire Hydrant Damage Repair						
d Water Main Leak Repair						
e Service line Repair						
f 2" Service Line Replacement						
g Valve Box Repair/Maintenance						
h Blow-off Replacement						
i Service Line Replacement (3/4" to 1")						
j Water Meter Repairs						
k Water Meter Customer Emergency Shut-off						
l Regulator Repairs (Service Side)						
m Fire Flow Testing (Monitor contactor during testing)						

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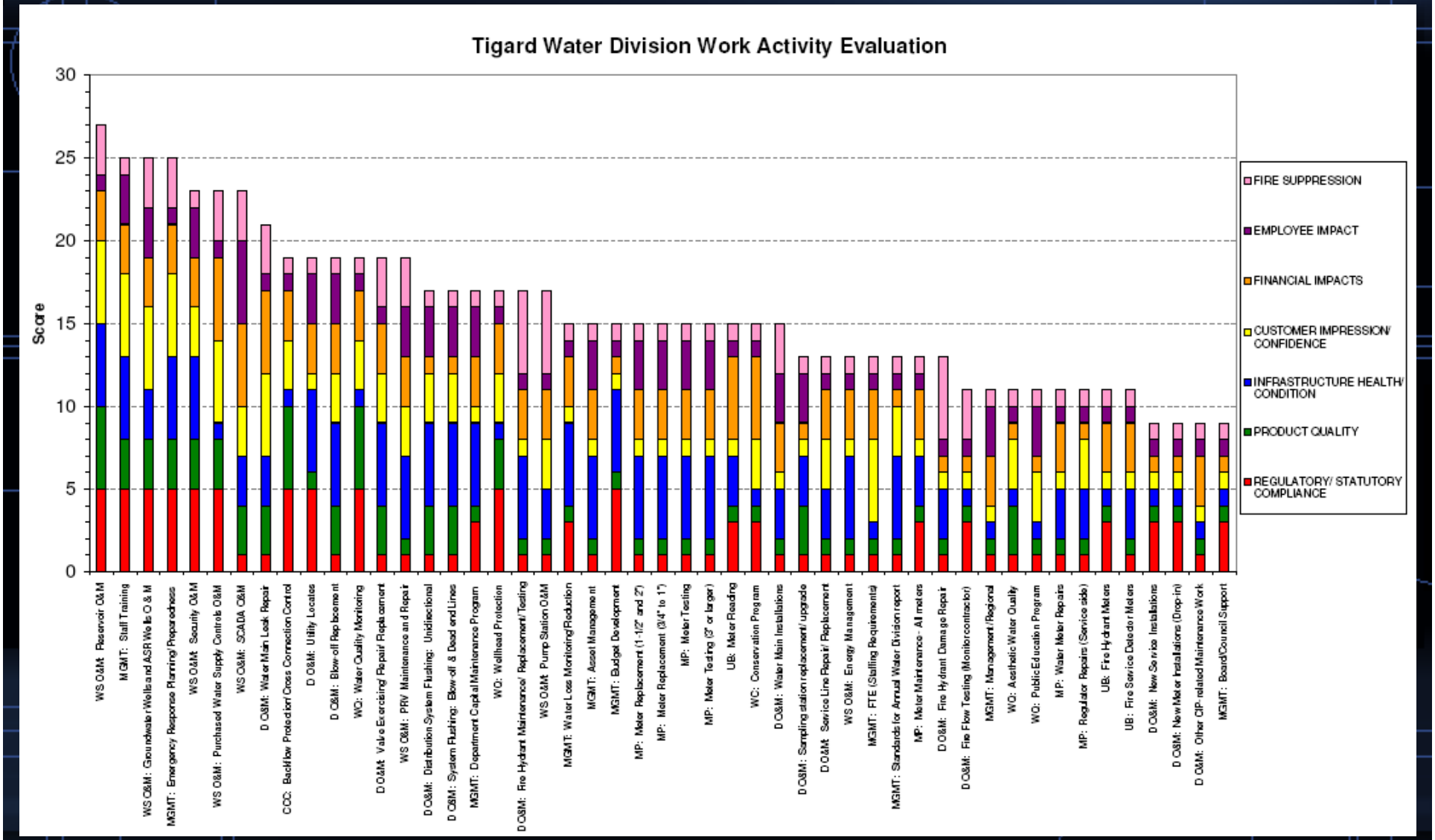
1 Distribution O&M						
Scheduled Maintenance						
a System Flushing - Unidirectional 6, 8, 12 & 16 inch						
b System Flushing - Blow-off & Dead end lines						
c Valve Exercising/Repair/Replacement	1	3	5	3	3	1
d Fire Hydrant Maintenance/Testing						
Unscheduled Maintenance						
a Customer Service						
b Utility Locates						
c Fire Hydrant Damage Repair						
d Water Main Leak Repair						
e Service line Repair						
f 2" Service Line Replacement						
g Valve Box Repair/Maintenance						
h Blow-off Replacement						
i Service Line Replacement (3/4" to 1")						
j Water Meter Repairs						
k Water Meter Customer Emergency Shut-off						
l Regulator Repairs (Service Side)						
m Fire Flow Testing (Monitor contactor during testing)						
Scheduled CIP Work						
a Water Main Installations						
b Service Line Installations						
c Water Meter Installations						
d Other Miscellaneous CIP Work						


Tigard Water Division Work Activity Evaluation
Score
0
5
10
15
20
25
30
FIRE SUPPRESSION
EMPLOYEE IMPACT
FINANCIAL IMPACTS
CUSTOMER IMPRESSION/ CONFIDENCE
INFRASTRUCTURE HEALTH/ CONDITION
PRODUCT QUALITY
REGULATORY/ STATUTORY COMPLIANCE
WS O&M: Reservoir O&M
MGMT: Staff Training
WS O&M: Groundwater Wells and ASR Wells O & M
MGMT: Emergency Response Planning/ Preparedness
WS O&M: Security O&M
WS O&M: Purchased Water Supply Controls O&M
WS O&M: SCADA O&M
D O&M: Water Main Leak Repair
CCC: Backflow Protection/ Cross Connection Control
D O&M: Utility Locates
D O&M: Blow-off Replacement
WQ: Water Quality Monitoring
D O&M: Valve Exercising/ Repair/ Replacement
WS O&M: PRV Maintenance and Repair
D O&M: Distribution System Flushing: Unidirectional
D O&M: System Flushing: Blow-off & Dead end Lines
MGMT: Department Capital Maintenance Program
WQ: Wellhead Protection
D O&M: Fire Hydrant Maintenance/ Replacement/ Testing
WS O&M: Pump Station O&M
MGMT: Water Loss Monitoring/Reduction
MGMT: Asset Management
MGMT: Budget Development
MP: Meter Replacement (1-1/2" and 2")
MP: Meter Replacement (3/4" to 1")
MP: Meter Testing
MP: Meter Testing (3" or larger)
UB: Meter Reading
WC: Conservation Program
D O&M: Water Main Installations
D O&M: Sampling station replacement/ upgrade
D O&M: Service Line Repair/ Replacement
WS O&M: Energy Management
MGMT: FTE (Staffing Requirements)
MGMT: Standards for Annual Water Division report
MP: Meter Maintenance - All meters
D O&M: Fire Hydrant Damage Repair
D O&M: Fire Flow Testing (Monitor contractor)
MGMT: Management/ Regional
WQ: Aesthetic Water Quality
WQ: Public Education Program
MP: Water Meter Repairs
MP: Regulator Repairs (Service side)
UB: Fire Hydrant Meters
UB: Fire Service Detector Meters
D O&M: New Service Installations
D O&M: New Meter Installations (Drop-in)
D O&M: Other CIP-related Maintenance Work
MGMT: Board/Council Support

Project Summary

- Large Group Meeting
  - Scope of Work
  - Process with Working Group
  - Results
  - Tidbits, Observations and Feedback
- Summary Memo

Key Outcomes

- Better understanding of interrelationships
- Common set of definitions for terminology
- Objective means to evaluate work activities

Lessons Learned - 1

- Allow time to listen carefully to each participant
  - (difficult when an outside consultant is involved and the “dollar meter” is running)
- Let discussions flow
- Openly and respectfully challenge or address internal issues

Lessons Learned - 2

- Let the Facilitator direct and redirect discussion to meet goals and objectives of the meeting
- KISS – used “three number” scoring system, limited choices into three clear, distinct groupings
- Scoring together as a group (vs. “voting” by individuals) provided better discussion and early buy-in

Lessons Learned - 3

- Review scoring system and make changes to ensure importance of specific activities is captured
- Look for skewed data
  - Fire Suppression attribute - providing fire hydrants was scored low, yet common sense indicated they were primary to the mission of the City

Lessons Learned - 4

- At the end of the project
  - Identify next steps
  - Assign tasks
  - Measure activities and deliverables

Currently…

- SOPs are not completed – time consuming and difficult for field staff
- Results lead to the creation of a Valve Maintenance Crew and purchase of Valve Exerciser Trailer

Thank You!

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