Tailored Stakeholder Communication of Water Breaks from the Field

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Aurora Water
Background on Aurora Water
Operations

Overview
- 445 employees
- 3 water treatment plants
- 1 water reclamation facility

Enterprise Funds
- City Council
- Operates on cost of service: tap fees and water rates – no taxes
Supply and Service

- 50,000 acre feet per year
- 85,000 taps
- System losses (M36 standard) less than 5%

Image: Aurora Places Comprehensive Plan 2018
Distribution

- Sanitary Sewer Service
- Storm Drainage Maintenance
- Potable Distribution System
- Reclaimed Distribution System
Mobile Background

- **2015**: Purchased and deployed 90 tablets
  - **Focus**: Collector
- **2016**: Adoption push
  - **Focus**: Collector replacing map books
- **2017 Focus**: Getting edits = 1k by end of year
- **2018 Focus**: Solutions
  - Over 200 mobile users and 100 + desktop users
- **2019 Focus**: High Accuracy
Water Break
Solution Overview
Water Breaks Dashboard
Public Works Dashboard

6+7
Asphalt
Patching Needed

3+0
Concrete
Patching Needed
Soil Corrosion Editing Map
The Workflow
Software

- Collector
- Survey 123
- Operations Dashboard
- Microsoft Flow
1. Start in Collector
Custom Attribute Display

Use the area below to define, format, and lay out the information you want to display.

Click here to record a new water break
Click here to record a nearby street cut

UNITID: (UNITID)

OK CANCEL

Link Properties
URL: arcgis-survey123://?itemID=e1750924d1a94a26a978e
Link Text: Click here to record a new water break
Set Cancel

arcgis-survey123://?itemID=e1750924d1a94a26a978e
&field:PIPE_COAT={CASING}&field:PIPE_LINE={LINING}&field:MATERIAL={MATERIAL}&field:UNIT_TYPE=WATER&field:UTILITY={WATER_TYPE}&field:COMPKEY={COMPKEY}&field:DIAMETER={DIAMETER}&field:WARD={WARD}&field:PRESSURE_ZONE={ZONE_PRESS}&field:INSTALL_DATE={INSTALL_DATE}
2. Launch Survey 123
3. Send Notifications
A new priority asphalt patch is needed.

**Break number:** WATERBreak19-0104-17:30

**Address:** 161 Del Mar Cir

**Excavation comments:**

**Asphalt**
- area (sqft): 80
- volume (cu ft): 39.999984

**Patching Information**

*Priority: Yes heavy traffic*
New Water Break Added - 2220 s chambers rd

volume (cu ft):

Staff present during break

Comments:
hole under clamp eroded away saddle

Thank you,
askinner

To view this location in Google Maps click here: https://www.google.com/maps/search/39.6760448709463,-104.809050808871

Review all breaks by clicking the link below and searching by the break number using the magnifying glass in the top right hand corner of the map.
https://auroraco.maps.arcgis.com/apps/opsdashboard/index.html#/cb52651f00ed4ab4b94f024fa275f0c5
4. Open Collector in Public Works View
Inside the Public Works Map
5. Corrosion Control
6. Review Warranty Checks
Non-Water Break Cuts
1. Start in Collector
2. Launch Survey 123 – Different form

Cut Details

Traffic Control Needed:
- Yes
- No

Sweeper needed:
- Yes
- No

Priority patch:
- Yes
- No

Comments:
- large valve replacement project

User:
- mgrove

Supervisors email address:
- kbremnin@auroragov.org
3. Same Notifications

A new asphalt patch is required.

- **Cut Number:** Cut19-0110-13:58
- **Address:** 16691 E Kent Dr

**Excavation comments:** Valve in patch
- Asphalt
  - area (sq ft): 63
  - volume (cu ft): 31.5
- area (sq ft): 
  - volume (cu ft): 
- area (sq ft): 
  - volume (cu ft):

**Patching Information**
- **Priority:** No
- **Traffic Control Needed:** No
- **Sweeping Needed:** No

Thank you.

[Click here to view location on Google Maps](https://www.google.com/maps/search/19.64829957,-104.70991202)

Review all patches by clicking the link below and searching by the job number using the magnifying glass in the top right hand corner of the map.

[https://auranco.com/map Dashboard](https://auranco.com/app/map/dashboard/index.html?4e9e2e97d6244a0b17851cb102ef)
4. Public Works Completes in Collector

Asphalt Patch Required
X:3198735.54 Y:1681014.02
Edited by mgrove_AuroraCo 5 hours ago

TRAFFIC CONTROL NEEDED:
No

COMMENTS:
second cut on 10/19

ASPHALT PATCH DATE
Enter a date
Use current

ASPHALT PATCH WIDTH

ASPHALT PATCH LENGTH

ASPHALT PATCH DEPTH

ASPHALT PATCH STATUS
<No value>

ASPHALT PATCH NOTES

The Savings
Communication

- Increases real time data reliability
- Eliminates communication pain points
- Making GIS center of process, takes GIS out of the process
Focus on the UI

- Dashboard views
- CSV export view
Empowering Decisions

- Easy to add to analysis
- On the fly dashboard analysis
- Not just oldest section to newest
Reduced QC – Single Source of Truth

- Previous process: Once a year update in GIS
- Intern clean 6,000 + historic breaks
- Over 3 months of work
- Lots of guessing
Planned Updates

- Merge using ArcGIS for Python API
- Feed predictions back in
- Utility Network tracing
- Create management dashboard
  - Make more business practices automated
Lessons Learned

- Don’t just move paper to digital
- Embrace scope creep on one project
- Build in 3 pilot rounds and schedule ahead of time when field users are least busy, if possible
- Video SOPs can help with training burden
Questions?
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Aurora Water