Field Collection of Critical Public Works Information

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What is a Mobile Application in Public Works

It’s an electronic approach to documenting and tracking field operations and infrastructure assets

Water, Sewer & Streets, Storm Drains
The Concept’s Origin

- Our Public Works Director visited an “asset management” booth at an APWA conference.
- She considered the potential benefits to staff and management in El Segundo.
- Realized it could provide “METRICS” for Public Works.
Its Potential Uses

- Elimination of institutional memory
- Document and photograph repository
- Historical records repository
- Instant field access to infrastructure maps
- Documenting daily/weekly workload
- Work effort accountability
- Evaluating resource needs – is staffing “right sized?”
- Planning tool for working with difficult residents
More Potential Uses (cont’d)

- Documenting rate at which field assets degrade (painting, signage, pot holes)
- Updating undocumented mis-documented field assets (water/sewer line, signs)
- Documenting hot spots for backups, graffiti, main failures
- Improved ability to convey deficiencies to City Council with pictures (~1000 words)
- Reminders and scheduling activities – a planning tool for working with difficult residents
Operations Staff Reaction to the Concept

LUKEWARM!!!

With a chance of cool.....
Selecting the Right Application

- Assigned the project to a key staff member
- Researched companies
- Set up interviews for three firms
- Evaluated the suite of options available

Ease of use was CRITICAL to its success
Interview Process – Key Staff Involved in Every Presentation

- Sewer, Water, Streets
- GIS, IS, Supervisors
Having GIS and IS staff be part of the evaluation and selection process is VITAL for buy-in, set up, migration and long term support.
Key Considerations in Selection

- Was the software intuitive (simple to use)?
- Robustness to meet multiple Divisions needs
- Cost of software, migration and support
- Extent of software support
- Hardware options
  - Cost
  - Durability
  - Storage
  - Compatibility
Key GIS Considerations

- Get GIS data in the field
- Needed to be Esri based
- Efficient collection of assets from the field
- Simplicity! Simplified management of inspection forms
- Simplified reporting
What Are the Costs?

- No. of tablets (hardware) needed
- Training for all staff - lump sum
- Software cost - per tablet
- Migration – lump sum
- Annual fees for software and support
- Staff time of those involved - priceless

- 6 tablets, 8 software packages, training and migration = $70,000
Selling it to Decision-Makers

- Using the right **Buzz Words** to achieve buy-in and support from City Manager and City Council
  - Disaster Preparedness
  - Improved field efficiencies (time savers)
  - Work product accountability
  - Permanent records retention
  - Elimination of institutional memory
Field Solution

- infraMAP was selected as field data collection solution
- Eliminated paperwork in the field
- GIS maps and functions in the field
- Fully disconnected – no need for Wi-Fi or VPN in the field
- Reporting in the field
- Supervisory reporting for critical assets
Rolling it Out

- Meetings with Divisions on forms and fields to be included – semi-customized
- A few weeks to add fields, migrate data to SDE format to allow versioning, and build base map
- Staff training – plan on more than once
- Start using it right away
<table>
<thead>
<tr>
<th>Water</th>
<th>Sewer</th>
<th>Streets</th>
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<tbody>
<tr>
<td>Exercising Valves</td>
<td>Hot Spots</td>
<td>Street Signage</td>
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<tr>
<td>Hydrant Testing</td>
<td>Jetting</td>
<td>Sidewalks/Curbs</td>
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<tr>
<td>Hydrant Painting</td>
<td>Main Replacements</td>
<td>ý Repairs</td>
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<td>Meter/Box Replacements</td>
<td>Main Breaks</td>
<td>ý Hazards</td>
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<td>Main Replacements</td>
<td>Customer Notifications</td>
<td>ý Replacements</td>
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<tr>
<td>Main Breaks</td>
<td>Customer Cleanouts</td>
<td>Pot Holes</td>
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<tr>
<td>USA Marking</td>
<td>Lift Station Maintenance</td>
<td>Resurfacing</td>
</tr>
<tr>
<td></td>
<td>Storm Drain Cleaning/Stenciling</td>
<td>Striping/Painting</td>
</tr>
</tbody>
</table>
Infrastructure Base Map of El Segundo
Examples - Tablet Views
Redline Corrections

Redline Type
Map Correction - New

Redline Description
Move 50' East

Move 50' East
Document Hazards
Logging Work Effort

- Graffiti removal
- Curb painting
- Sign Repair and replacement
Infrastructure Maintenance
Asset Detail and Maps/Videos
Field Measuring – P/L
Lessons Learned

- Champion to get Council/City Manager buy-in essential
- Get supervisors to truly focus on setting up forms and required fields at the beginning
- Don’t presume staff attitude/willingness to embrace this tool
- Learning curve for field crews is steep
- Roll out by divisions – not all at once
Unexpected and/or Surprising

- Who embraced this idea and who didn’t; buy-in varied at all levels
- It was not as intimidating as feared
- The flexibility of the program
- Instant access to maps was a big hit
- Increased spatial accuracy in GIS
Is it Working?

- Yes, but slowly.
  - Some benefits are instantaneous (access to info),
  - Some benefits will take time to realize (documenting work effort and activities)
Importance of Leadership

- The ability to see the tool as valuable to those who will be using it and set expectations for being positive to lower level staff.

- It won’t grow in value over time if it’s not embraced from the beginning.
Questions?

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