Using GPS, Esri Collector and ArcGIS Online to obtain accurate asset locations.

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Agenda

1. Overview of Sacramento Suburban Water District

2. The Project

   a) Problem Statement

   b) Conceptual Design

   c) Solution Development

   d) Implementation

SACRAMENTO SUBURBAN WATER DISTRICT

❑ Location: Sacramento, CA
❑ Population Served: approx. 180,000
❑ Staff: ~ 70 full time
❑ 709 Miles of Mains
❑ 91 Production Wells
❑ ~ 20,000 Valves
❑ ~ 6000 Fire Hydrants
❑ ~ 10,000 Fittings
❑ Over 47,000 Service Connections
❑ 2018 Annual budget: O&M $22,000,000
                                    CIP $20,000,000

Problem Statement

- Locating buried/overlaid infrastructure.

- ~80k assets to locate

- Current base map not geospatially accurate

- Textual location information (DIMS)

Conceptual Design

- Centimeter grade accuracy required

- Standard out of box tools

- Real-time updates to location data

- Uses existing GIS asset data

- Ease of use

Solution

- GPS Equipment Acquisition

- Collection Process Development

  - ArcGIS On-Line

  - Existing Assets

  - New Assets

- GPS X/Y Coordinates Storage Process Development

  - ArcGIS On-Line

  - SDE Geodatabase

- Getting Back to. . . .
  - Esri Collector

GPS Equipment Acquisition

➢ Competitive Selection

- Wanted the best options to choose from

➢ Demonstrations

- Wanted to see the units in action, under various conditions

➢ Field Trials

- Wanted to see how the units performed in locations within our district that we had an idea could be problematic

Collection Process Development – ArcGIS Online (AGOL)

- ➢ Requirements
  - Device Independent (IOS, Android, Windows OS)
  - Standard Tools IE., adding and updating GIS features
  - Ease of Access/Use – ability to set up process so all users are able to start use quickly
- ➢ Platform
  - Esri AGOL
  - Esri Collector
  - Leica Zeno Connect
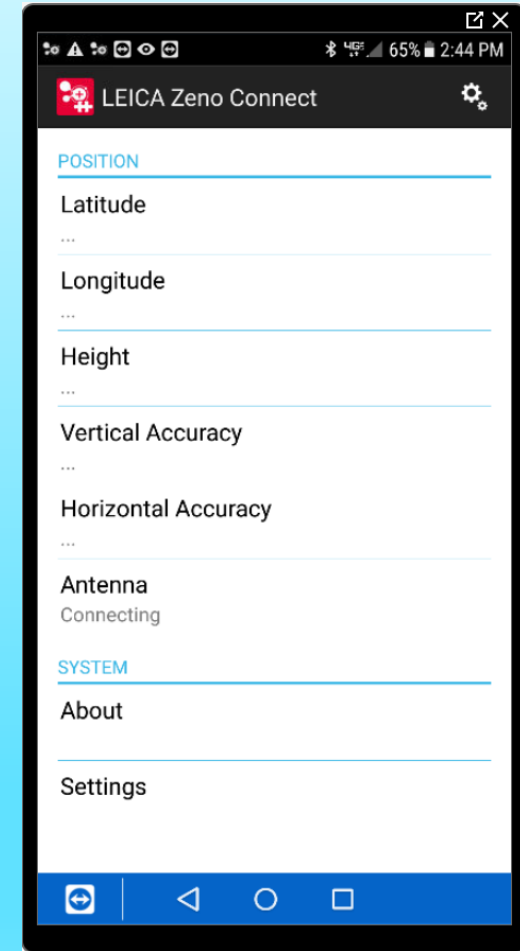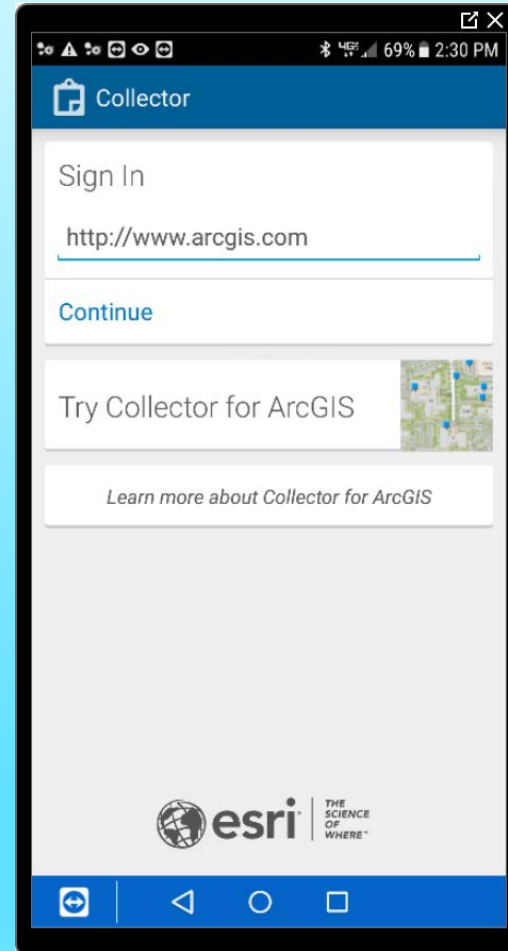
Collection Process Development – Existing Assets

- Real-Time Update
- No Post-Processing
- Ease of Use
- Project Specific Maps
- Staff Access
- Contractor Access
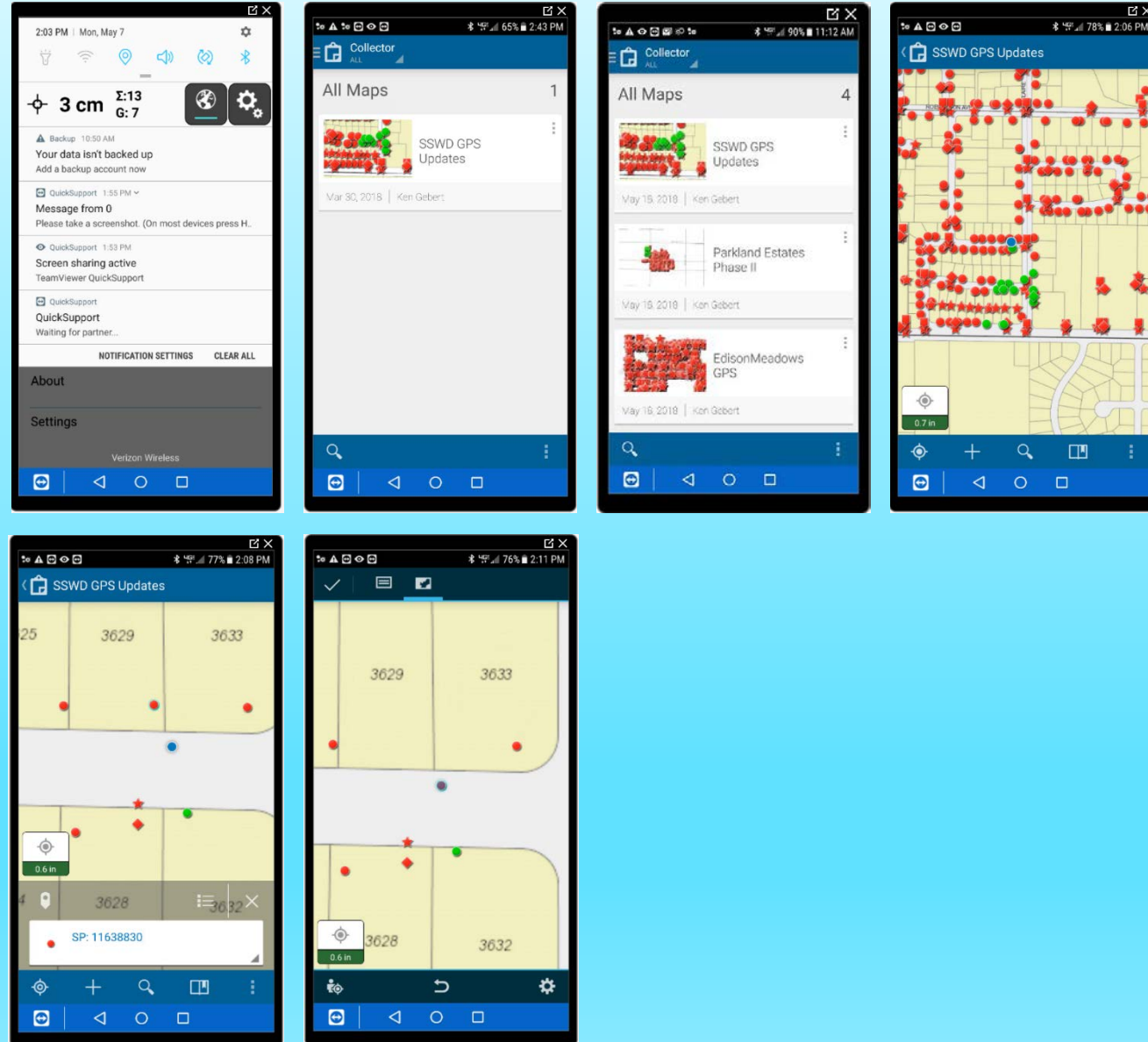
Collection Process Development – New Assets

- Create New Point Features
- Flagged for Update

GPS X/Y Coordinates Storage Process Development - AGOL

- Feature Classes
- Environment Setup
- Real-time Updating Location Coordinates
- GPS Meta Data

GPS X/Y Coordinates Storage Process Development - AGOL
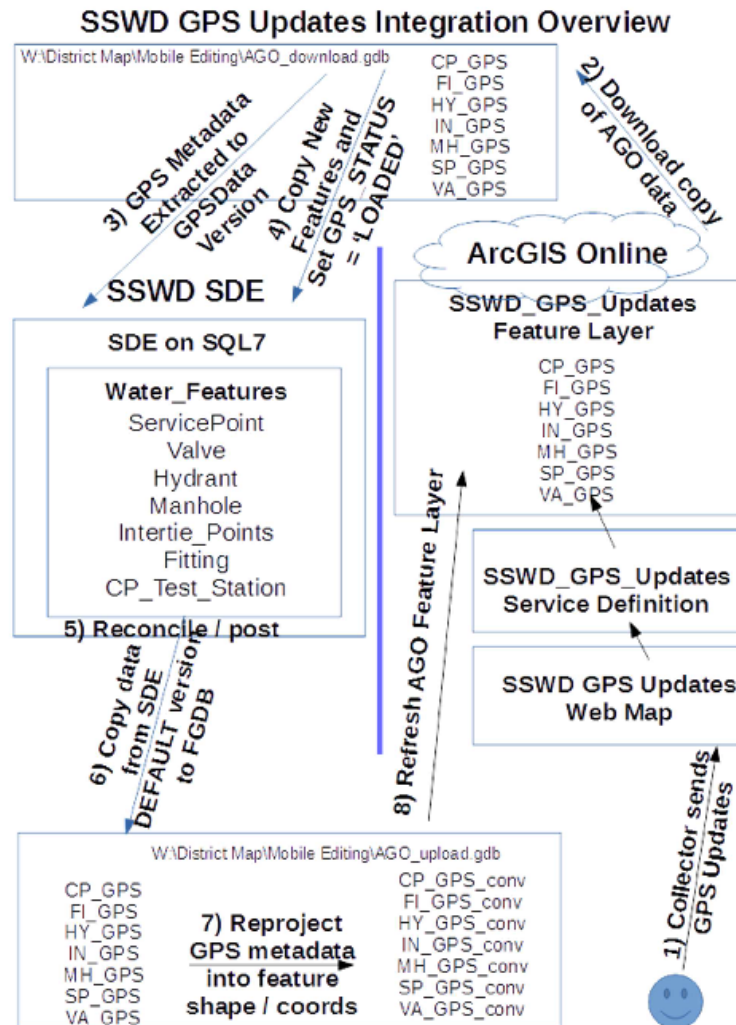
ArcGIS Online Maps

- One full district map for SSWD staff use
- Project maps for contractors which only allow them to work on the features inclusive to their project(s)

ArcGIS Online Maps

GPS X/Y Coordinates Storage Process Development - Geodatabase

- Location Coordinate Storage
- Attribute Fields
- Coordinate System
- State Plane vs Lat/Lon
- Storing Multiple Coordinates
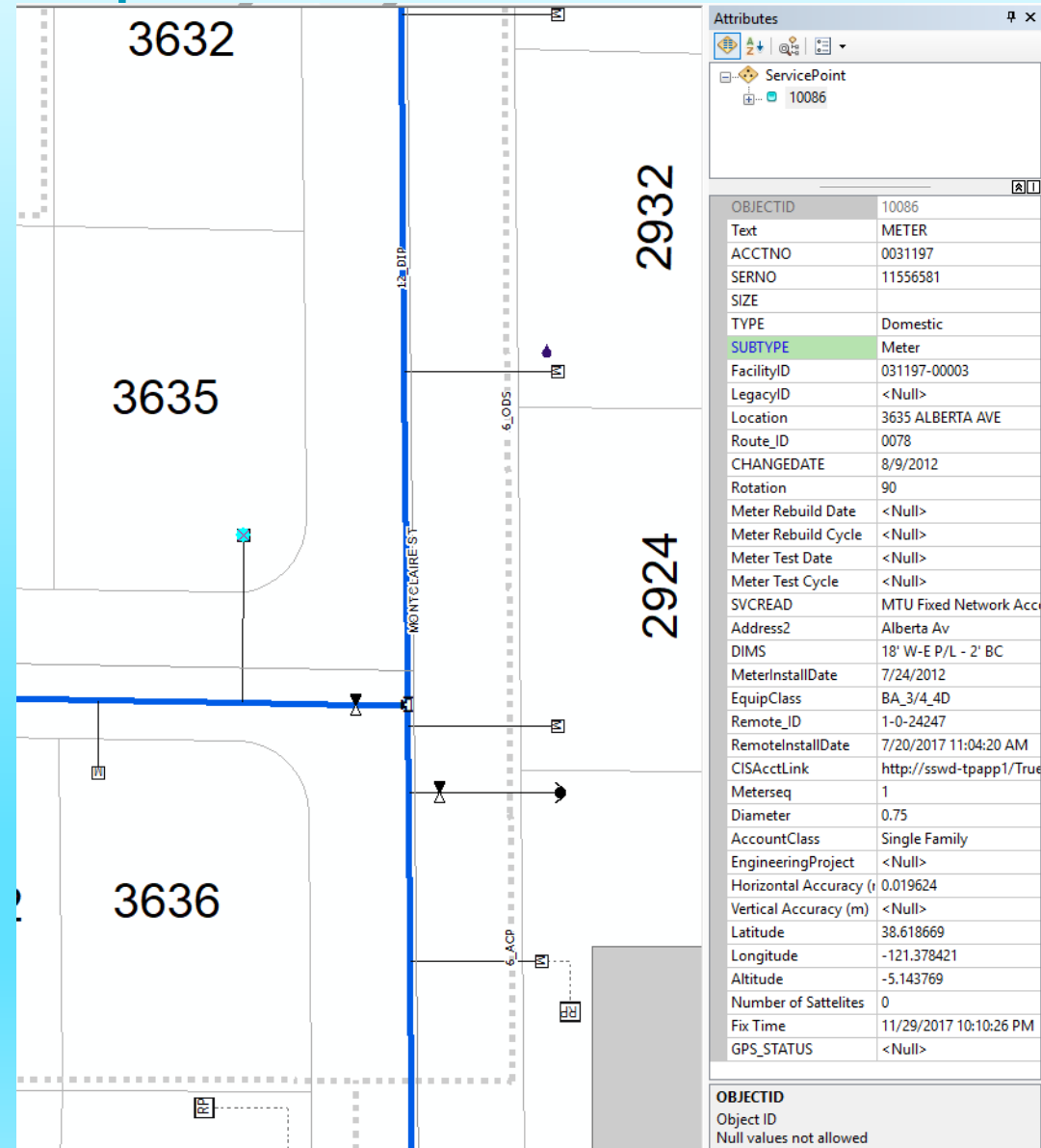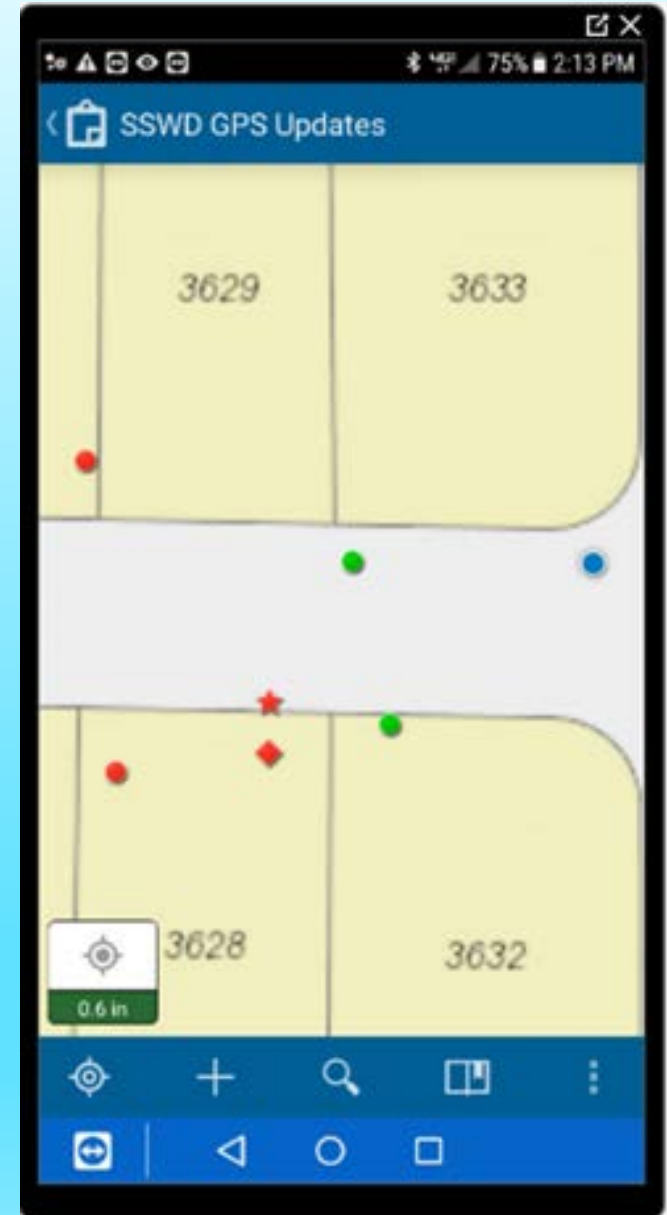
Getting Back To….

➢ Esri Collector
- • Best current option
- • Fairly easy to use
- • Will look for a better way as we get GPS locations for our assets

PROGRESS

- ❑ Valves – 2053 / 27,131
- ❑ Fire Hydrants – 743 / 7112
- ❑ Fittings – 1445 / 10,250
- ❑ Service Connections – 6794 / 46,584
- ❑ Cathodic Protection Stations – 33 / 92

QUESTIONS