GIS and Systems Integration for Small Water Utilities

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South Tahoe Public Utility District

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Introduction

Wanda Stanley, GISP
South Tahoe Public Utility District
South Tahoe Public Utility District - Location

District Offices:
1275 Meadow Crest Dr.
South Lake Tahoe, CA
District Facts

- 14,000 Water Customers
- 18,000 Sewer Customers
- 109 Full-Time Employees
- 5 Elected Board Members
- 7.7 MGD Treatment Plant Capacity
- Full-time GIS Staff: 1
- GIS Consultant: Alex Johnson, Arete Systems
Systems Integration

Alex Johnson, P.E.
Arête Systems
District Systems
Pieces of the Puzzle

Enterprise GIS

ArcGIS for Server

Customer Billing System (Springbrook)

Asset Management System (Maintenance Connection)

County Parcel Base

Sewer Permits

Water Connection Drawings
Data Management
Best Practices

• Unique Identifiers
• System of Record
• Store Data in One Place
• Replicate Where Needed
• Mature, Documented, and Consistent Data Models
Data Management

Approach

- GeoProcessing Models
- GeoProcessing Scripts (ArcPy)
- Administrative Processes
County Parcel Base

- Customer Billing System (Springbrook)
- Asset Management System (Maintenance Connection)
- Enterprise GIS
  - ArcGIS for Server
  - Sewer Permits
  - Water Connection Drawings
- County Parcel Base
County Parcel Base
Considerations

• Shapefile format
• System of Record for Parcel geometry
  - Replaces all parcels in GIS
• Only import parcels in local area
• APN needs formatting
  - 03367306 Ë 3367306
• Imported once a year
County Parcel Base
GeoProcessing Model
County Parcel Base
What is a GeoProcessing Model?

• ArcToolbox Tools
• String them together
• Graphical program
County Parcel Base

How it works…
County Parcel Base

How it works…
County Parcel Base
GeoProcessing Tool
Customer List
Considerations

• Updated frequently
• System of Record for customer information
• Multiple tables in Springbrook
• Formatting for display
  - Phone Numbers
  - Addresses
Customer List
GeoProcessing Script

• Run on a schedule
• Need flexibility of scripting
What is a GeoProcessing Script?

- Python form of ArcToolbox tools
- Include them in a Python script
- Uses ESRI’s ArcPy site package
Customer List
How it works…

• Copies customer table from Springbrook
• Maps source to destination fields
  - E.g. Cust_No → CustomerID
• Populates APN, service type fields
• Formats phone numbers, service addresses
• Clears customer table in GIS
• Copies new records into GIS
Customer List
GeoProcessing Script Tool
Customer List
Run as Scheduled Task
STPUD Toolbox
District Systems
Pieces of the Puzzle

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Water Connection Drawings
Thank you

Question/Answer