Avila Beach CSD 3D GIS

Presented by Alma Gormley
GIS Specialist
Wallace Group
Focus of Project

• To further extend the capabilities of the District’s water distribution and sewer collection system base maps.

• Integrating maintenance information from operational records with GIS.

• Develop a system which links the GIS data to a folder structure in order to record operational information for water and sewer facilities that require maintenance and replacement.
Three Types of End Users

1. **District**-Needs are to view GIS Layers for updates to water and sewer base maps.

2. **Operation Staff**-Needs to provide maintenance Information and have a place to upload data.

3. **GIS Staff**-Provides quarterly database updates to keep sewer and water base maps current, training, manages SND (Shared Network Drive) for District.

*Both users want ‘point and click access’ to this information.*
Software Used

• Arc Map 10.1, Arc Globe, 3D Analyst Extension

• Google SketchUp

• Google Earth

• Google Drive
ABCSD Sewer Atlas
Prep attribute table for ‘linking’

<table>
<thead>
<tr>
<th>OBJECTID</th>
<th>SHAPE</th>
<th>DIAMETER</th>
<th>MATERIAL</th>
<th>STREET</th>
<th>UPMHID</th>
<th>DMMHID</th>
<th>PIPE_ID</th>
<th>FIELD</th>
<th>FIELD</th>
<th>FIELD_SLOPE</th>
<th>SH</th>
<th>OWNER</th>
<th>STREET_UNDERSC</th>
<th>Google Drive</th>
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<td>6&quot;</td>
<td>VCP</td>
<td>SAN LUIS ST</td>
<td>C2-1</td>
<td>C2-2</td>
<td>C2-2:1:2-C2-2</td>
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<td>8&quot;</td>
<td>PVC</td>
<td>FRONT ST</td>
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<td>B4-1</td>
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<tr>
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<td>6&quot;</td>
<td>VCP</td>
<td>LAUREL ST</td>
<td>C2-3</td>
<td>C2-5</td>
<td>C2-3-C2-5</td>
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</table>

Google Drive ‘shared link’ will populate this field once created.
Pick your Shared Network

Google Drive’ was the recommended shared network for ABCSD.

- **Reasons**
  - The Operations Staff, for maintenance of the sewer and water base data, already use Google Form.
  - The data is collected from i-Phone and uploaded to Google Drive.
  - The account is low in cost and the Operations Staff can update ‘on the fly’ using their hand held device and form.

This ensures the District is viewing the most up to date information for Sewer/Water Base Data.
Create Form

Avila Assets

* Required

Technician Name: *

Choose Your Asset: *

- Fire Hydrant
- Manhole

Continue »

5% completed

Manhole Number:

Select which manhole you are performing work on: *

A2-1

<< Back  Continue »

10% completed

Avila Assets

* Required

Manhole

Choose Your Project: *

- Inspection
- Cleaning
- Service Follow-Up

<< Back  Continue »

15% completed

Avila Assets

* Required

Manhole Inspection

Choose which portion of the system you are inspecting: *

- Initial Inspection
- Cover and Ring
- Structural Inspection
- Hydraulic Inspection

<< Back  Continue »

31% completed

Powered by Google Drive

This form was created inside of Avila Beach CSD.
Report Abuse - Terms of Service - Additional Terms
Manhole Initial Inspection

- Manhole Cover Size *
  - 24-inch
  - 30-inch
- Manhole Size *
  - 4-feet
  - 5-feet
- Manhole Material *
  - Cast-in-Place
  - Pre-Cast
- Cover Material *
  - Cast Iron
  - Aluminum
  - Plastic
  - Other: 
- Vent Holes in Cover? *
  - Yes
  - No
- Insert Type *
  - Plastic
  - Metal
  - Cast iron
  - Other:
- What would you like to do next? *
  - Cover and Ring
  - Structural Inspection
  - Hydraulic Inspection
  - Submit Service Request
  - Submit Form

Avila Assets

* Required

Manhole Cover and Ring Condition

Please provide a rating for the following categories: *

- Insert Condition
- Cover Condition
- Ring Condition
- Pick Hole Condition

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</tr>
</tbody>
</table>

Write any additional notes concerning the manhole cover and ring below:
If a "5" was checked, please explain why:

What would you like to do next? *
- Initial Inspection
- Structural Inspection
- Hydraulic Inspection
- Submit Service Request
- Submit Form

42% completed

Click submit to finish.

100%. You made it.
Linking in Google Earth

• Share Folder of Asset from Google Drive
Viewing Link in Google Earth
In a Nutshell

SHARE LINK

VIEW UPDATES ON SHARED NETWORK DRIVE

POPULATE LINK IN GIS TABLE

CONVERT TO .KMZ FOR GOOGLE EARTH
The Next Step

• Putting the Sewer and Water Base map in 3D
• Why?
  - To give the District a ‘Real World’ representation of sewer and water assets.
  - Help to provide a better planning and analysis model for any future development
  - always give a little more….
Free download - 3d Design tool used for creating buildings [http://www.sketchup.com/download](http://www.sketchup.com/download)

- Add Geo-location
- Create building outlines
- Texture faces of buildings for a ‘realistic’ look
- Export as kmz file (for best translation into Arc Globe and Google Earth)
2D View points, lines, polygons
Add Texture to buildings using Google Earth photo texture tool, import image or use ‘model materials’ toolbox from software.
Level of detail depends on project scope

- SketchUp has ability to make faces based on dimensions you assign
- Exports to 3d model .kmz or .dae (Collada) file
3D GIS Arc Globe
Share with Google Earth

500 year flood
Conclusion
QUESTIONS??