UTILIZING GIS TO IMPLEMENT ADA IMPROVEMENTS IN PLEASANTON, CA
PROJECT TEAM MEMBERS

- Rusty Wynn, City of Pleasanton
- Bill Strand, RRM Design Group
- Eli Davidian, Consultant
THE PROJECT

- Part of the City’s ADA Transition Plan and Capital Improvement Program
- Assess All Curb Ramps for ADA Compliance
- Assess Sidewalks for Deflections Greater Than $\frac{1}{2}$ inch
THE PROJECT

- Assess Ramps for Compliance With 28 CFR Part 36
  - Developed 7 Classes To Categorize Curb Ramp Compliance
- Sidewalks Assessed For Level Of Deflection
  - 3 Classes Of Deflection
SPECIFICS

- 2,157 Intersections
- 207 Centerline miles
- Create a GIS Database
- Prepare a Final Report With Costs
- Limited Budget
CURB RAMPS AND SIDEWALKS

[Images of curb ramps and sidewalks]
THE SOLUTION
EFFICIENT APPROACH

- GeoXH
- Bikes
- One Pass Approach
- 2 Person Crews for Safety and Efficiency
- Quality Control Built Into Data Dictionary
Data Collection & Management

- Trimble GeoXH
  - Sub Meter Accuracy
  - Windows Based OS
  - Bluetooth Enabled
  - Long Battery Life
  - Lightweight
Data Collection & Management

- Pathfinder Office & Terra Sync
  - Data Dictionary
  - Easily Customizable
  - Streamlined Collection
  - GeoXH Compatible
  - Photo Link
Data Collection & Management

- Field Preparation
  - Planning
  - Routes
  - Crews
  - Equipment
  - Training
Data Collection & Management

- Performance Measures
  - Points Collected
  - Miles Covered
  - Field Days
  - Reshoots
Data Collection & Management

- Data Processing
  - Nightly Download
  - Weekly Compilation
  - Differential Correction
  - Export to Shapefile
Data Collection & Management

- Data Management – ArcGIS 9.3
  - Personal GeoDB
  - Arc Map Project
  - Data Cleaning
  - Attribute Edits
  - Photo Uploads
### Data Collection & Management

#### Data Management – ArcGIS 9.3

- **Personal GeoDB**
- **Arc Map Project**
- **Data Cleaning**
- **Attribute Edits**
- **Photo Uploads**

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#### Attributes of Ramp

| STName | Ramp Ty | Height of | Ramp Run | Slope Adj | GPS Date | Det_Warn | Ramp_Confo | Horz_prec | Latitude | Longitude | Cost Estim  | Photo
|--------|---------|-----------|----------|-----------|----------|----------|------------|-----------|----------|-----------|------------|--------
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| CHABOT A | 3/4 - 1 | 7.7 | 6.4 | 0 | Non_Conforms | 0.7 | 37.691645 | -121.901472 | $2,200.00 | <Raster
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| CHABOT A | 0 - 1/4 | 11.9 | 2.4 | 0 | Non_Conforms | 0.4 | 37.694598 | -121.901365 | $2,200.00 | Im
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| CHOCOLATE B | 0 | 6.4 | 1.5 | 0 | Non_Conforms | 0.6 | 37.682458 | -121.854578 | $2,200.00 | <Raster
| CHOCOLATE B | 1/4 - 1/2 | 7.8 | 4 | 0 | Non_Conforms | 0.6 | 37.692311 | -121.654593 | $750.00 | Im

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**Options:**

- **ROW**
- **Display**
- **Source**
- **Map Book**

**Drawing:**

- **Drawing**

**Font:**

- **Arial**

**Size:** 10
Data Collection & Management

- Quality Control
  - Precision
  - Completeness
  - Consistency
  - Duplicates
Data Collection & Management

- Analysis
  - Sorting the Data
  - Establishing Priorities
  - Reporting Outcomes
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**Select By Attributes**

- **Layer:** Ramp
- **Method:** Only show selectable layers in this list
- **SELECT:** * FROM Ramp WHERE:
  ```sql
  [Height_of] = '0 - 1/4' OR [Height_of] = '1/4 - 1/2' AND ([Ramp_Runni] <= 8.3) AND ([Slope_Adj] >= 5.0)
  ```

**Display Selection:**
- **Show:** All

**Source:**
- **Map Book**
UTILIZING THE DATA

Merging of Feature Classes

- The initial delivery included:
  - Ramp
  - Ramp_Missing
  - Ramp_Missing_No_SW
  - ROW_etc
  - Stnames
  - SW_Deflection
  - SW_Missing

- Now it is in SDE:
  - vector.GIS_ADMIN.Ramps SDE Feature Class
  - vector.GIS_ADMIN.SW.Deflection SDE Feature Class
  - vector.GIS_ADMIN.SW_Missing SDE Feature Class
UTILIZING THE DATA

- Updated Database To Reflect Recent Repairs
  - 70 New Ramps
  - 192 Replacements
UTILIZING THE DATA

- Created Maps Depicting The Status of Ramp and Sidewalk Conditions for The City’s ADA Citizen Advisory
UTILIZING THE DATA

- CCMS (Computer Maintenance Management System)
  - Ramp and Sidewalk Layers Now Contain Additional “ID” Which is Required for Loading Into CCMS
  - Both Layers are Visible in CMMS
  - CMMS Users Are Not Allowed to Edit Database
UTILIZING THE DATA

INTERNAL WEBSITE CREATED
UTILIZING THE DATA

- Internal Website Created Showing Ramps and Sidewalks
- Users Log Proposed Changes In an Excel Spreadsheet on The City’s SharePoint Site and GIS Updates The Geodatabase
THE FUTURE

- This Project Was Just The Beginning
- The City is Now Delving Deeper Into the Attribute Data, and Planning Long Term Construction Based On This Project
LESSONS LEARNED

- Wi-Fi Camera Transfer of Data is Slow And Battery Intensive
- Clearly Define What a “Missing Ramp” Is