Esri Application Integration Produces Highly Capable Field Operations Solutions

BUILDING PERMITS AND INSPECTIONS



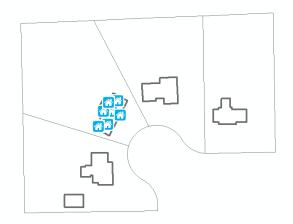
What we will be Covering:

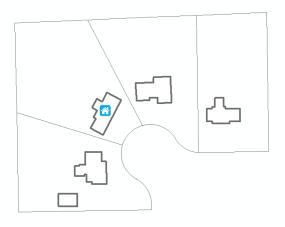
- Integrating Applications
 - Benefits
 - Easy to do
- Data Collection Applications
 - Survey123 for ArcGIS- Form-Centric
 - Collector for ArcGIS- Map-Centric
- Leveraging Webhooks
 - Automate Back-End Processes
 - Create Content
 - Adds Fail-Safe

- Smart Layers
 - Definition Query Based Services
 - View Based Services

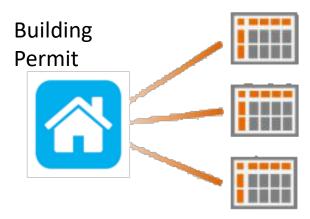
A Use Case Scenario:

Using GIS to Conduct Building Inspections

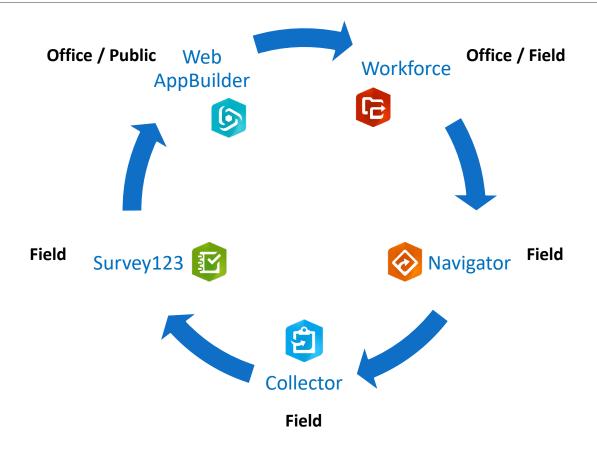




Inspection Surveys



Why Integrate?



Data Collection Applications

Survey123:



- Released in 2016
- Form centric (Surveys)
- Surveys are created via the web or a spreadsheet editor
- Surveys are published as feature services
- Supports editing new and existing data
- Supports smart forms
- Supports disconnected editing
- Supports anonymous access
- iOS, Android, Windows (7, 8, 10), Mac, Linux, Web
- Supported by Esri

- Released in 2013
- Map Centric (points, lines, polygons)
- Data collection maps are created using ArcGIS Online
- Data is published as feature services
- Supports editing new and existing data
- Supports disconnected editing
- iOS, Android, Windows 10
- Supported by Esri

What do these terms really mean?

FORM CENTRIC

- ✓ Data Collection that is more Concerned with Questions
 - Attribute data centric
 - Best suited for complex attribute collection
 - Geo-Capable, but not the focus

MAP CENTRIC

- ✓ Data Collection that is more Concerned with the Where
 - Geospatial data centric
 - Best suited for simple attribute collection
 - Attribute capable, but not the focus

Why Integrate Collector With Survey123?

When might you want to collect data seamlessly across both applications?

- ✓ When you have a scenario where the data you are collecting is both form centric and map centric
- ✓ When you want to leverage the strengths of each collection method into a single solution.
- ✓ When you want your data to remain tightly coupled without producing excess and disparate datasets

Schema Design

Prepare your data in the following manner:

- Create a building permit feature class and building inspection tables
- Add GlobalIDs to your datasets
- Do not version your data
- Create relationship classes to relate feature class to inspection tables, use the GlobalID field from the feature class as the primary key, and a GUID field in the inspection tables as the foreign key
- Add attachments if necessary
- When ready, publish the data with sync enabled

Using Survey123 with Existing Feature Services

The easiest way:

- Publish data as a hosted feature service or to an ArcGIS Server that is federated with Portal for ArcGIS
- Launch Survey123 Connect > choose New Survey > click the radio button "Feature Service" > choose your feature service > Create Survey
- Surveys From Related Tables
 - Delete Questions Not Found in Related Table
 - Fill in the form_id property with name of the related table in the settings tab of your spreadsheet
- http://doc.arcgis.com/en/survey123/desktop/create-surveys/survey123withexistingfeatureservices.htm

The harder way:

- Publish data to non-federated ArcGIS Server
- http://support.esri.com/technical-article/000014793

URL Scheme

Provides a protocol for launching apps and invoking actions:

- Launching the Survey123 app from Collector
- Opening a specific survey
- Prepopulating survey questions

Launches **Populates** Opens Specific Survey Survey123 Survey Fields

arcgis-survey123://?itemID=d6141937cfe740eaa144a817fd3b26&field:BldPerm={PermitNum}&Owner={TaxName}&Inspector={PlumbInspect}

Leveraging Webhooks

Edit webhook A POST request will be sent to the payload URL below with selected details of any subscribed events. Name * Multipurpose Inspection Form (MS Flow) Payload URL * https://prod-110.westus.logic.azure.com:443/workflows triggers/manual/paths/invoke?api-version=2016-06-01&s Trigger events ✓ New record submitted Existing record edited Event data Include following information in the payload Survey info 🕝 Server response 🕝 ✓ Submitted record ② ✓ User info ② Portal info Status On

Cancel

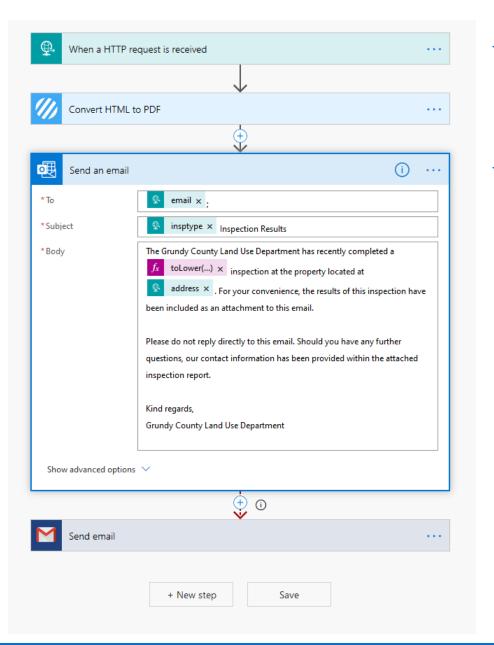
Save

Integrate Survey123 with these services

| ABRA FlexiBee | ActiveCampaign | ActiveTrail | Acuity Scheduling | Google Shopping | Google Slides | Google Tasks | Google Team Drive | Stripe | SugarCRM 7/8 |
|--|---|--|---|--------------------------------------|--|--|--|---------------------------------------|-----------------------------------|
| Adobe Sign | Airtable | Alexa Internet | amoCRM | Google Translate | GoSMS | Gravity Forms | ● G Suite | SuperManager | SuperSaaS |
| Anabix CRM | Android | Apifier | Apify | Harvest | Help Scout | ● HipChat | Hootsuite | Teamgate CRM | Teamwork Desk |
| APIWHA | Apple iOS | Apple Push Notifications | Apple Safari | HTML/CSS to Image | • НТТР | HubSpot CRM | Chargebee | Textbelt | Text parser |
| Archive | Asana | Attendance GIRITON | Autopilot | Chase | Chatfuel | iDoklad | • IFTTT | Todoist | Toggl |
| Autotask | AWeber | AWS Redshift | AWS S3 | ● Image | ● ImgBB | Infusionsoft | Insightly CRM | TradeGecko | ● Trakt.tv |
| Bank of America | Barcodes | Basecamp 2 | Basecamp 3 | Instagram | Intercom | Invoice Ninja | IQDial | ● Tumblr | Twilio |
| Beds24 | BeLazy | Bitbucket | Bitfinex | o ISO | ● iÚčto.cz | JIRA Server | JotForm | Twitter | Typeform |
| Bitly | Bitstamp | Bittrex | BizMachine | JSON | Kartra | ● KissFlow | Klaviyo | UnionBank | Units |
| Blogger | BlueLink | Bolt IoT | Botsify | ● Knack | Komerční banka | Landbot | Leady | Vimeo | VTiger CRM |
| Box | Broker Toolbox CRM | BTCC | Bubble | Lemlist | LinkedIn | LionDesk | LiveWebinar | Weather | Webflow |
| Buffer | BulkGate | ● Caflou | Calendly | Magento | Magento 2 | MailerLite | Mailgun | Wells Fargo | ● WeMo |
| California Bank & Trust | Campaign Monitor | Canny | Capsule CRM | MailChimp | Mail Komplet | Mandrill | ManyChat | WooCommerce | WordPress |
| Caspio | Citibank | Citrix ShareFile | Clearbit | Markdown | Marketo | Math | Mattermost | Wufoo | Wunderlist |
| ClickFunnels | ClickSend | ClickUp | Clockify | Mautic | Mavenlink | Medium | Meetup | ● Yahoo | Yodel.io |
| CloudConvert | Coda (beta) | Cognito Forms | Coinbase Pro Integrations | MeisterTask | Merk | MessageBird | Microsoft SQL Server | ● YouTube | Zammad |
| Constant Contact | Converter | ConvertKit | Copper | Microsoft Teams | Microsoft To-Do (Beta) | Microsoft Word Templates | MIME | Zendesk Guide | ZeroBounce |
| coreBos | ● CraftQL | ● CSV | Currency | Mixpanel | Mocean | monday.com | Monday v2 | O Zoho CRM | Zoho Desk |
| Customer.io | Česká spořitelna veřejná data | ● ČVUT Grades | ČVUT KOS | MongoDB | Moosend | Mustache | MySQL | Zoho Invoice | Zoho Mail |
| DataBox | Data store | Data24-7 | DigitalOcean Spaces | NeoGate | Ninox | Numverify | OfficeGuy | Zoom.us | Zoho Sign |
| Discord | Disqus | Docupilot | Domotron control | Office 365 Calendar | Office 365 Email | Office 365 Excel | Office 365 People | SuiteCRM 7/SugarCRM 6 CE | Superfaktura |
| Drift | • Drip | Dropbox | Dropbox Business | OneDrive | OneDrive for Business | OneNote | OneSignal | Survey Anyplace | Survey Monkey |
| D7SMS | Ecomail.cz | E-conomic | ● EET | OpenWeatherMap | Optimy | Paperform | ParseHub | Teamwork Projects | Telegram Bot |
| ● Egnyte | Elasticsearch | Eledo PDF generator | Email | Patreon | PayPal | PayPal Classic | PayPal Payflow Pro | The Keys | The Keys Pro |
| Emercury | Encryptor | Energomonitor | Etsy | PDF | Phaxio | Phone number | Pinterest | Toodledo | Tools |
| Eventbrite | Evernote | EverWebinar | ● Expedia | Pipedrive CRM | Pipefy | Placeholder | Platformly | ● Trello | Trustpilot |
| Facebook | Facebook Custom Audiences | Facebook Groups | Facebook Lead Ads | Plivo | Plotly | Plutio | Pocket | Twist | Twitch |
| Facebook Messenger | Facebook Offline | Facebook Pages | Fakturoid | Podio | Poloniex | PostgreSQL | PrestaShop | ● Uber | Unbounce |
| | Conversions | | | Process Street | Pushbullet | Pushcut | QuickBooks | UpViral | Userflow |
| FAPI | Feedly | Fieldbook | ● Figma | RabbitMQ | Raiffeisenbank | Rav Messer | RAYNET CRM | Wasabi | Wave |
| Fio Banka | Firebase Cloud Messaging | Flarum | Flashyapp | Rebrandly | Recurly | reddit | REST Countries | Webhooks | WebinarJam |
| Flickr | Flow | Focuster | Formstack | Revolut Business | RingCentral | Robolytix | Rossum Elis | Wild Apricot | Wix Answers |
| Formstack Documents | Foursquare | FreshBooks | Freshdesk | RSS | Runkeeper | Salesflare | Salesforce | WP Webhooks | Wrike |
| Freshsales | Freshservice | Front | ● FTP | Segment | SendGrid | SendinBlue | SendPulse | Xero | XML |
| GatewayAPI | GetResponse | Ghost | ● GIPHY | Sendy | ● SFTP | ShipStation | Shopify | ● Yoobic | YouCanBook.me |
| Gist | GitHub | GitLab | Gitter | Shopio | Short.cm | ScheduleOnce | ● SIGNL4 | Zapier | Zendesk |
| Global Payments WebPay | Gmail | Google+ | Google Analytics | SigParser | SingleCase | Site Search 360 | Skype | Zoho Books | Zoho Creator |
| Google Calendar | Google Cloud Print | Google Cloud Speech | Google Cloud Vision | Slack | Smaily | SmartEmailing | Smartsheet | Zoho Forms | Zoho Inventory |
| Google Contacts | Google Data Studio | Google Docs | Google Drive | SmartTask | Směnné kurzy ČNB | Smoove | sms77.io | Zoho Projects | |
| Google Forms | Google Groups | Google Hangouts Chat | Google Chrome | SOAP | SoundCloud | Spotify | Square | | |
| Google Maps | Google Photos | Google Photos (beta) | Google Sheets | ● SSH | StackExchange | Status Hero | Streak | | |

Webhook Usage Example:

If the process fails immediately send email notifying GIS staff of the problem



——— Incoming Survey123 payload

Send boilerplate email making use of the payload attributes and include PDF report from previous step as an attachment

Completed Building Inspection Forms



COUNTY OF GRUNDY Land Use Department 1320 Union St. Morris, Illinois 60450

Building Inspection Form:

This form documents a recent building inspection that was performed at the property located at 3560 East Grand Ridge, Mazon. Should you have any questions please contact the Grundy County Land Use department by phone at (815) 941-3228, or by email at bpazely@grundyco.org. Please see below for the details regarding your inspection:

NAME: Jon Stoja PERMIT: 20-B-07

ADDRESS: 3560 East Grand Ridge, Mazon

INSPECTION: Setbacks INSPECTOR: Bob Pazely DATE: 02/14/2020

PASS / FAIL: PASS

PASS WITH COMMENTS: Yes

COMMENTS

Call for a final inspection when work is completed

Grundy County Land Use Department 1320 Union St. Morris, Illinois 60450

ROUGH FRAME AND MECHANICAL REPORT

Date: 01/31/2020

Permit #: 19-SFR-010

Name: Tom Jebens

Address: 11996 North OBrien Road, Minooka

Inspection: Rough Frame and Mechanical

Inspector: Bob Pazely

Yes Pressure treated sill plate Yes Roof knee wall (when necessary) Yes Sill Sealer Yes 2nd floor stair headroom (6' 8") Yes Sill plate properly anchored Yes 2nd floor stair width 36" min. Yes Corner bracing (type) Yes 2nd floor stair tread 9" n, to n, 73/4 riser Yes Sheathing (condition of) Yes Landings not less than 36" x 36" Yes Exterior weather and insect barrier Yes Hallway width min. 36" (felt paper or Tyvek) NA Access to whirlood Yes Spacing of lookouts Yes Tempered glass required less than 60" Yes Joist spans in garage Yes Roof truss bracing above floor, storm doors, patio doors, Yes Garage scuttle (22x30") joist hangers ingress or egress door or panes Yes Attic light above scuttle greater than 9 sq. ft. Yes Bridging at 10' intervals Yes Bathroom vent fans to soffit or outside Yes Wall alignment (bad or bowed studs) No Range hood vented to outside Yes Notching of floor joist, studs & plates No Attic ventilation 1 sq. ft. per 150 sq. ft. Yes Lintels above windows & doors NA Crawl space venting 1 sq. ft. per 150 sq. ft. Yes Firestopping between floors when masonry is used Yes Fire wall between garage & living Yes Fire caulk around any penetration area with 5/8 type x drywall between floors and attic Yes Windows over 4 ft. 2 (2x4 on the sills) Yes Dryer vent to outside, max, length 25 ft. Yes Bedroom sill height not more than 44" Yes Fireplace safety strip, fire stop in chase. Yes Bedroom window openings 22H x 20W gas valve location, hearth extensions Yes Floor joist spans min. lap of 3" at girder 16" in front and 8" beyond each side, 6' opening - 20" in front and 12" beyond bearing partitions Yes Main support beam post (type) Yes Smoke detectors each floor, basement, Yes Vertical ridge supports each bedroom, hall next to bedrooms. Yes Collar ties 120V with battery backup Yes Lights in all closets, except linen NA All stair railings returned, quardrails 30° Yes Gas ledge in garage min. 4" with enclosures on 4" centers

NA Insulation Min. Walls R-13, ceilings R-30

PASS / FAIL: PASS
PASS WITH COMMENTS: Yes

Yes GFI recept's in all locations as per NEC

Grundy County Land Use Department 1320 Union St. Morris, Illinois 60450

FINAL OCCUPANCY INSPECTION FORM

Date: 02/14/2020
Permit #: 18-sfr-021
Name: Marty Steep
Address: 6703 West Dupont Rd. Morris
Inspection: Final Building

Inspector: Bob Pazely

MISCELLANEOUS & OUTSIDE

| Yes | Driveway | Yes | Paint & Caulk | Yes | Addresses |
|-----|------------------------|-----|------------------------|-----|--------------------|
| Yes | Sidewalks | No | Gutters and Downspouts | Yes | Wall Penetration C |
| Yes | Outside Light Fixtures | Yes | Doors and Weatherstrip | Yes | Foundation Expos |
| Yes | Stairs & Entry | No | Masonry/Siding | Yes | Railings/Rails |
| NA | Landscaping | Yes | Roofing | Yes | Window/Wells |
| Yes | Chimney | No | Soffit/Facia | Yes | Weep Holes |
| W | Con Curb Corons | V | Vant Dameses | V | Corosa Flourell |

CARPENTRY INSIDE

| es | Caulk Vanity Tops | Yes | Door & Trim | Yes | Egress Windows |
|----|-------------------|-----|-------------|-----|----------------|
| es | Door Hardware | Yes | Painting | Yes | Railings |
| | Floor Covering | Voc | Mindowe | Voc | Handralle |

HVAC & BASEMENT

| S | Vent Covers | Yes | Rim Joist Insulation | Yes | Beam Bolts |
|---|-----------------|-----|----------------------|-----|-------------------|
| s | Dryer Vent | Yes | J-Bolts/Nuts | Yes | Central AC |
| s | Fire/Draft Stop | Yes | Sump Cover Sec. | Yes | Furnace and Ducts |
| s | Bridging | Yes | Solid Block Beam | Yes | Vents and Flue |
| | | | | | |

ELECTRICAL

| Hallway Receptacles | Yes | Switched Openings | Yes | Sump Circuit |
|-----------------------|-----|-------------------------|-----|-----------------------|
| Smoke Detectors | Yes | Panel Labeling | Yes | Ground Fault: Panel |
| Interlocked Battery | Yes | Wire and Breaker Sizing | Yes | Ground Fault: Bath |
| Light Fixtures | Yes | Fluorescent/Recessed | Yes | Ground Fault: Kitchen |
| Min. (2) Appliance | Yes | Closet Lights | Yes | Ground Fault: Garage |
| Circuits for Kitchen | Yes | Grounding Waterline | Yes | Ground Fault: Hot Tub |
| Laundry Outlet 20 Amp | Yes | Grounding Tag | Yes | Ground Fault Front |
| Dishwasher/Disp. Cir. | Yes | Grounding Pan. Bond | Yes | Ground Fault Rear |
| | | | | |

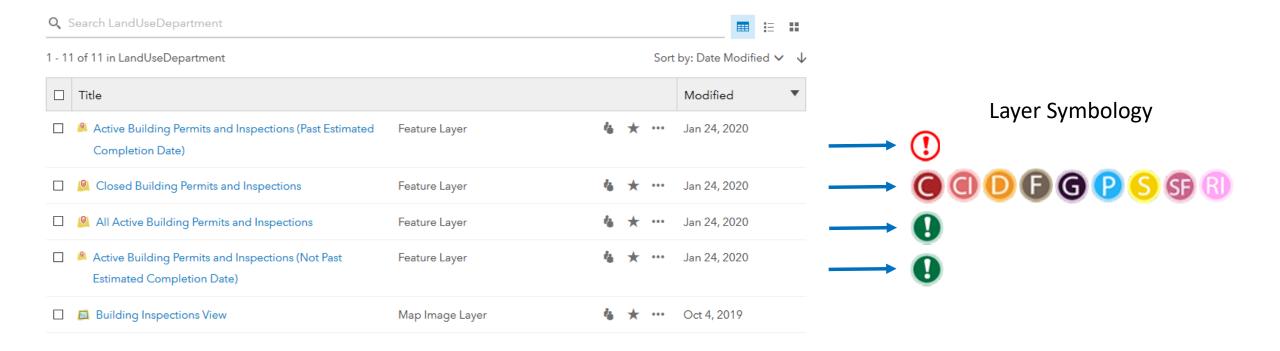
Yes Attic/Crawl Lights/Access

PASS / FAIL: PASS

Yes Micro Circuit

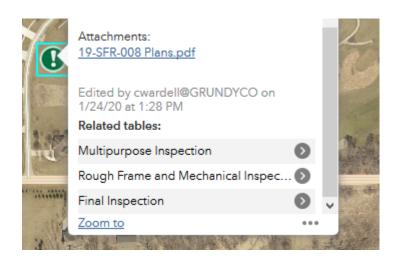
PASS WITH COMMENTS: Yes

Feature Layers Published with Definition Queries

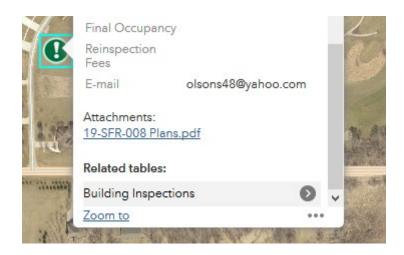


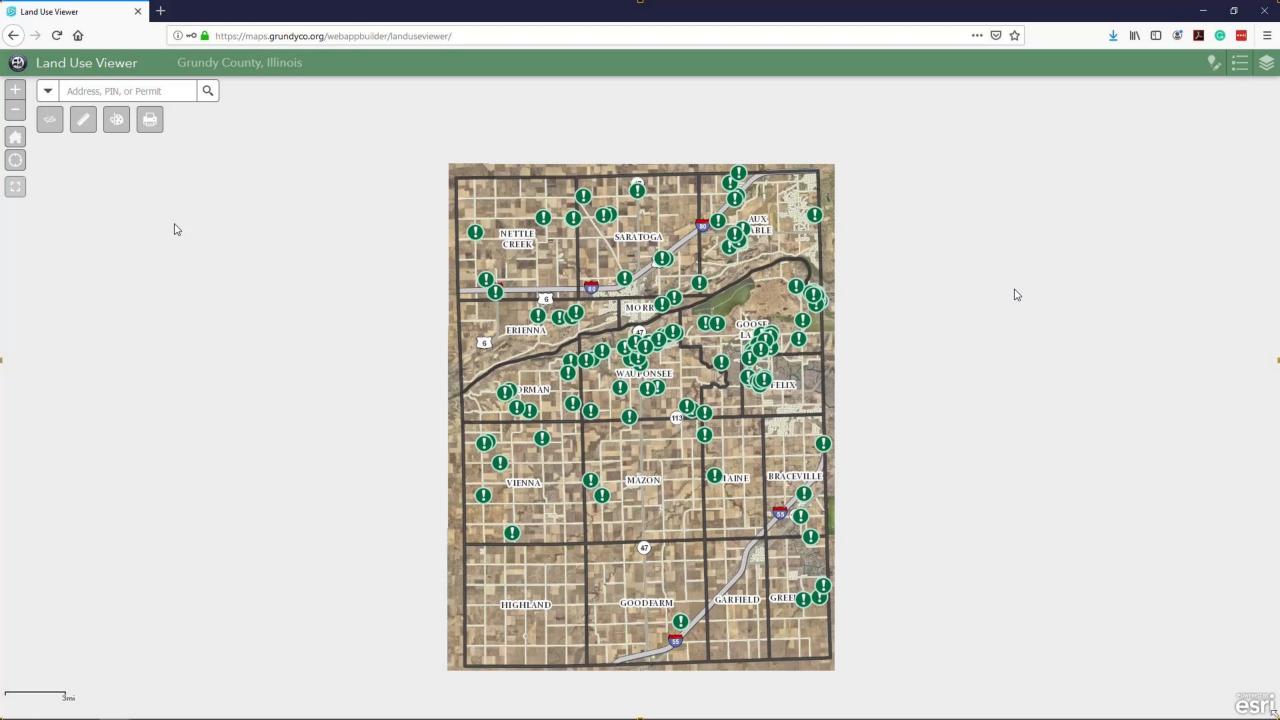
Map Image Layer Published Using a Geodatabase View

Popup Without View



Popup With View







Thank You!