



# Developing Simple Apps for Complex Workflows

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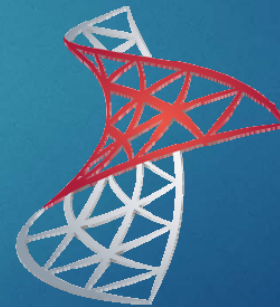


# Defining the Terms

# Simple Apps



# Complex Workflows





# Organizational Constraints



Limited GIS Staff



# Non-GIS Pro Audiences





Less this Guy...





...More This Guy



# Migrate to Web GIS



- Most Users Do Not Require ArcGIS Desktop
  - Fewer Maintenance Issues
- 

Access Tempe





# Before GIS

- Paper pamphlet listing accessible assets in city
- Several years out of date

## Tempe Parks - Disability Information

### City of Tempe Parks & Recreation Department

3500 S. Rural Rd. | 480-350-5200 | TTY: 480-350-5050

Fax: 480-350-5058 | [www.tempe.gov/parks/](http://www.tempe.gov/parks/)

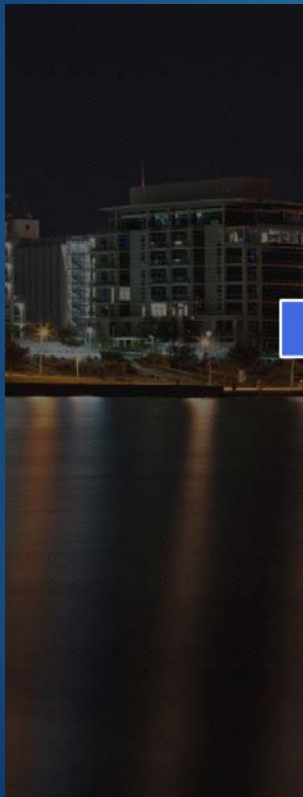
Tempe Parks	 Restrooms	 Parking
Evelyn Hallman Park 1900 N. College Ave.	X	X
Daley Park 1625 S. College Ave.	X	X
Escalante Community Center & Park 2150 E. Orange St.	X	X
Hanger Park 501 E. Knox Rd.	*	
Indian Bend Wash Habitat Curry Rd & Miller Rd.		X
Jaycee Park 817 W. Fifth St.	*	X
Kiwanis Park 5500 S. Mill Ave. at All America Way	X	X
Kiwanis Recreation Center 6111 S. All America Way	X	X
Papago Park 1000 N. College Ave.	*	X
Pyle Adult Recreation Center 655 E. Southern Ave.	X	X
Tempe Beach Park/Baseball Park	X	X
Tempe Diablo Stadium 2200 W. Alameda Drive	X	X
Tempe Town Lake Marina 550 E. Tempe Town Lake Dr	X	X
Westside Community Center 715 W. Fifth St.	*	X



# Goals

- WCAG-Compliant
- Allow for text-searching of assets (outside of GIS web app)
- Maintain data using back-end resources

# Access Tempe Text Search



Show 10 entries Search:

OBJECTID	Route Direction	Routes	ADA Approved	ORBIT Only	Transit Gutters	Shelter	Lighting	Next Ride Phone	Location	Next Ride ID
1	North Bound	66N	Pending	No	No	No	No	(602) 253-5000	S Kyrene Rd & W Carver Rd	14289
2	North Bound	65N, 66N	Pending	No	No	No	No	(602) 253-5000	S Kyrene Rd & W Cornell Dr	14223
3	North Bound	66N	Pending	No	No	No	No	(602) 253-5000	S Kyrene Rd & W Knox Rd	14283
4	North Bound	65N, 66N	Pending	No	No	No	No	(602) 253-5000	S Kyrene Rd & W Julie Dr	14222
5	North Bound	66N	Pending	No	No	No	No	(602) 253-5000	S Kyrene Rd & W La Vie Ln	14284
6	North Bound	66N	Pending	No	No	No	No	(602) 253-5000	S Kyrene Rd & W Palomino Dr	14288
7	North Bound	65N, 66N	Pending	No	No	No	No	(602) 253-5000	S Kyrene Rd & W Vaughn St	14220
8	North Bound	66N	Pending	No	No	No	No	(602) 253-5000	S Kyrene Rd & W Verde Ln	14290
9	North Bound	66N	Pending	No	No	No	No	(602) 253-5000	S Kyrene Rd & W Warner Rd	14286
10	North Bound	66N	Pending	No	No	No	No	(602) 253-5000	S Kyrene Rd & W Warner Ranch Rd	14285

Showing 1 to 10 of 736 entries Previous **1** 2 3 4 5 ... 74 Next

You are viewing **Bus/Rail** Information. [Search for something else](#)

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# Access Tempe App

(Beta) Access Tempe Web Map

Welcome to the Access Tempe Web Map

Pick your Location

Enter Your Address

Find

Add location

Access Tempe Report

We found **20 ADA Assets** in your search area.

- 1 Housing
- 17 Bus Stop
- 2 Light Rail Stop

[View Full Results](#)

Click to view more information. [Or Search Again](#)

Rail/Bus Stops, Parking, Buildings, Housing

RESULTS

**Housing**

Apartment : Hanover Mill & Fifth  
Address : 101 W. 5Th St, Tempe, AZ 85281  
Phone : (480) 579-2878  
Webpage : [Open Web Page](#)  
ADA Approved : Yes

[Zoom in](#) [Learn More](#)

**Bus Stop**

Next Ride ID : 18402  
Next Ride Phone : (602) 253-5000  
ADA Approved : Pending  
Route Direction : North Bound  
Routes : 48S  
ORBIT Only : No  
Transit Gutters : No  
Shelter : No  
Lighting : No  
Location : S Ash Ave & W Rio Salado Pkwy

[Zoom in](#) [Learn More](#)

**Bus Stop**

Next Ride ID : 14172  
Next Ride Phone : (602) 253-5000  
ADA Approved : Yes

# Results



- Residents can find accessible resources near them for first time
- Markup aims to meet accessibility standards
- Data is kept up-to-date



# Graffiti Incidents Collection



# Before GIS

- No Spatial Element
- Poor Spatial Accuracy (e.g. 'Graffiti Located Near Corner')
- Data Impossible to Quantify
- Inflexible Schema

# Goals

- Browser-based
- Streamlined user experience
- Reports capability





# Mapping Graffiti Incidents





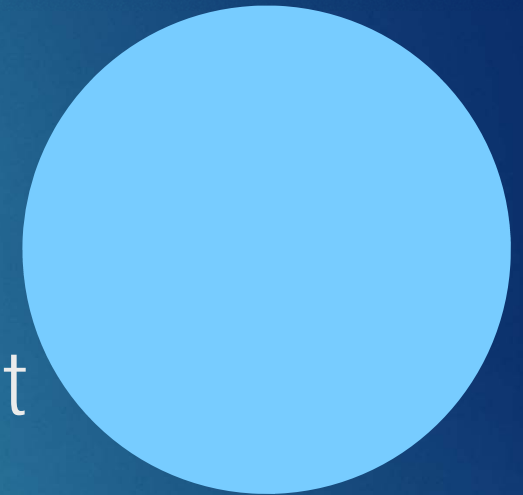
# Data Input Process



- Quick & Flexible
- Prompt Review on Schema Change Requests
- Limit User Access at Server Level

# Leveraging ArcPy

- Runs Nightly
- Generates Unique ID
- Scalable to include other classes/functions (e.g. Cost Calculation)



# Reviewing Graffiti

The screenshot displays a GIS application interface. At the top, a 'Query' dialog box is open, offering options to search by notification, select by a single date, or select by a date range. Below this, a 'Graffiti Management View' table is visible, listing various graffiti incidents with columns for incident number, ACR number, comments, IR number, location description, notification type, incident date, moniker classification, number of tags, clean method, square footage, property type, and work end time. The table shows 10 rows of data, with a total of 269 features and 0 selected.

Incident Number	ACR Number	Comments	IR Number	Location Description	Notification	Incident Date	Moniker Classification	Number of Tags	Clean Method	Square Footage	Property Type	Work End Time
4/6/2016-EC-1774		POSTER		ROW	Proactive Graffiti	April 6, 2016	General	1	Pressure Wash	10	Utilities	1,117
3/16/2016-EC-1545	450543	graffiti		Rail Road Alleys	ACR Main	March 16, 2016	General	1	Paint	50	City	0
3/11/2016-PC-1530		GRAFFITI		Parks	Proactive Graffiti	March 11, 2016	Racial	2	Paint	2	City	844
4/5/2016-EC-1748	459423	graffiti		Parks	ACR Main	April 5, 2016	General	2	Paint	5	City	1,259
11/5/2015-PC-0062		stickers		Signs	Proactive Graffiti	November 5, 2015		2		0		0
11/12/2015-PC-0211		GRAFFITI		Rail Road Pillars	Proactive Graffiti	November 12, 2015		13		0		0
2/3/2016-EC-1119		GRAFFITI/7SQFT/0923		ROW	Proactive Graffiti	February 3, 2016		1		0		0
11/12/2015-PC-0184		GRAFFITI		Light Pole	Proactive Graffiti	November 12, 2015		3		0		0

269 features 0 selected



# Reviewing Graffiti

The screenshot displays the 'Tempe, Graffiti Incidents Management Viewer' interface. At the top, there is a search bar with the placeholder text 'Find address or place'. Below the search bar, a map of Tempe, Arizona, is shown with several black circular markers containing numbers, representing individual graffiti incidents. A 'Search Incidents' dialog box is open in the center, listing various query options with right-pointing chevrons:

- Query by Single Date
- Query by Date Range
- Query by Location
- Query by Moniker
- Query by Notification
- Query by Number of Tags
- Query by Property Type
- Query by Square Footage

Below the list is a 'Clear Results' button. At the bottom of the map, a summary box displays the following statistics:

Total Square Footage	Total Number
172,931	

The right side of the image features a large blue circle and a green vertical bar, which are decorative elements of the presentation slide.

# Results

- Superior UXUI
- Benefits of complexity are hidden
- Quantifiable data
- Greater reporting product





Slash the Trash





# Before GIS

- 3<sup>rd</sup> Party iOS/Android App
- Expensive Licensing
- Once Yearly Updates
- Poor UXUI



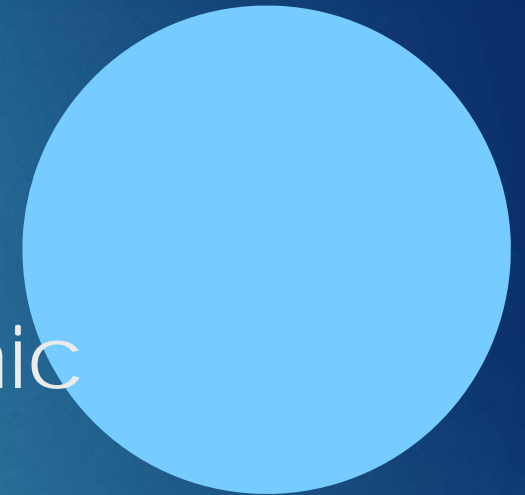
# Goals



- Simple UXUI
- Easy to update on back-end
- iFrame-compliant to serve mobile-first users

# Feature Layers

- Recycling
- Trash
- Mixed Bulk & Green Organic
- Recycling Facilities





# Internal Editing

The screenshot displays a GIS application interface. On the left, the 'Add Features' panel is active, showing a 'Yard Waste Pickup' feature with a trash can icon. The main map area shows a street grid in Tempe, Arizona, with a yellow dashed rectangle highlighting a specific area. A metadata popup window is open over this area, displaying the following information:

Yard Waste Pickup	
District ID	C
District Name	Area C
Agency	Tempe Public Works
Website	<a href="http://www.tempe.gov/slashthetrash">http://www.tempe.gov/slashthetrash</a>
Contact Name	Tempe 311
Phone	480-350-4311
Email	tempe311@tempe.gov
Subtype Field	Yard Waste Pickup
Schedule	Other
Additional Information	June 20-24: Bulk Trash only. Place material out by 6 a
Monday	No
Tuesday	No

# Version 1.0

- Embedded ArcGIS Online web map
- Not user friendly



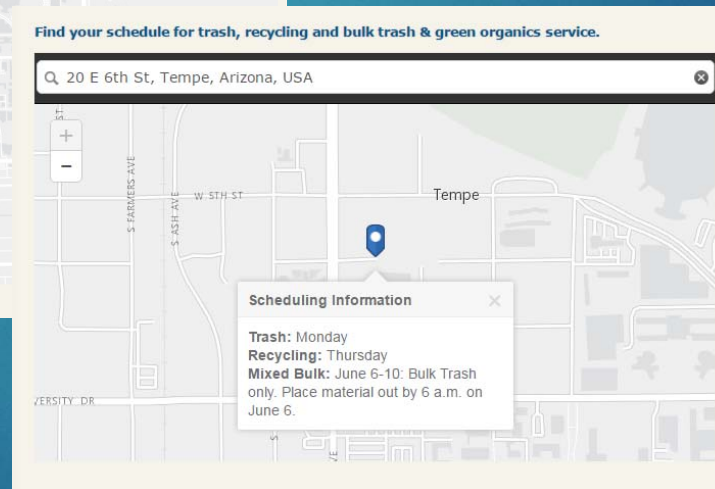
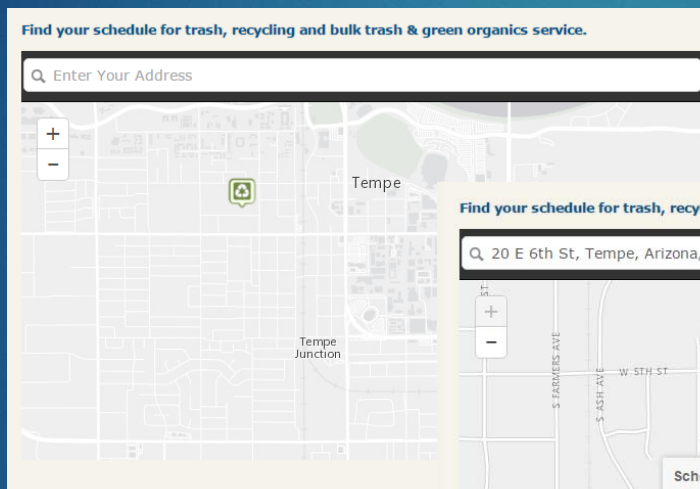
# Version 2.0

- ESRI JS API 3.x, Bootstrap 3.3.6, jQuery
- Responsive front-end





# Version 2.0



# Results

- Cost savings
- Intuitive
- Browser based
- Scalable content (e.g. grease disposal feature layer)



# Takeaways

- Leverage Cross-Product Functionality
- Balance between COTS and Custom Apps
- Adapt & Re-Use
- User Experiences Enriched by GIS







# Thank You!

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