



Esri International Developer Summit
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Building Apps with the ArcGIS for Utilities Solution

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ArcGIS for Utilities - What is it?

- **Industry specific configuration of the full ArcGIS Platform**
- **Set of focused maps and apps to leverage information and workflows to make decisions**
- **Designed to be configurable and extensible**

ArcGIS For Water Utilities App Configurations

Desktop

Infrastructure Editing
Data Reviewer for Water Utilities
Capital Improvement Planning

Mobile Apps

Infrastructure Mobile Map
Valve Exercising
Fire Flow Capture
Hydrant Inspection
Main Break Response
Manhole Inspection
Backflow Preventer Inspection
Storm Inlet Inspection
Map Change Request
Field Note Capture
Executive Dashboard
Green Infrastructure Verification
Watering Violations

Internal Web Apps

Operations Dashboard
Water Distribution Network Viewer
Sanitary Sewer Network Viewer
Storrmwater Network Viewer
Map Change Request
Proposed Water Design App
Green Infrastructure Viewer
Isolation Trace

External Web Apps

Drinking Water Alert
Drinking Water
Capital Project Coordination
Capital Projects Map
Sewer Overflow Alert
Service Request
Public Information Center
Water Restrictions
Sewer Service Lookup

ArcGIS For Gas Utilities App Configurations

Desktop

Mobile Apps

Internal Web Apps

External Web Apps

- Exposed Pipe Inspection
- Map Change Request
- Field Note Capture
- Damage Assessment
- As Built Recorder

- Map Book Picker
- Map Change Request
- As Built Mapping

- Service Lookup

ArcGIS For Electric Utilities App Configurations

Desktop

Storm Risk Planning

Mobile Apps

Damage Assessment
Map Change Request
Field Note Capture
Executive Dashboard
Hazard Recorder

Internal Apps/Services

Damage Operations Dashboard
Map Change Request
Map Notes
Hazard Notification

External Apps

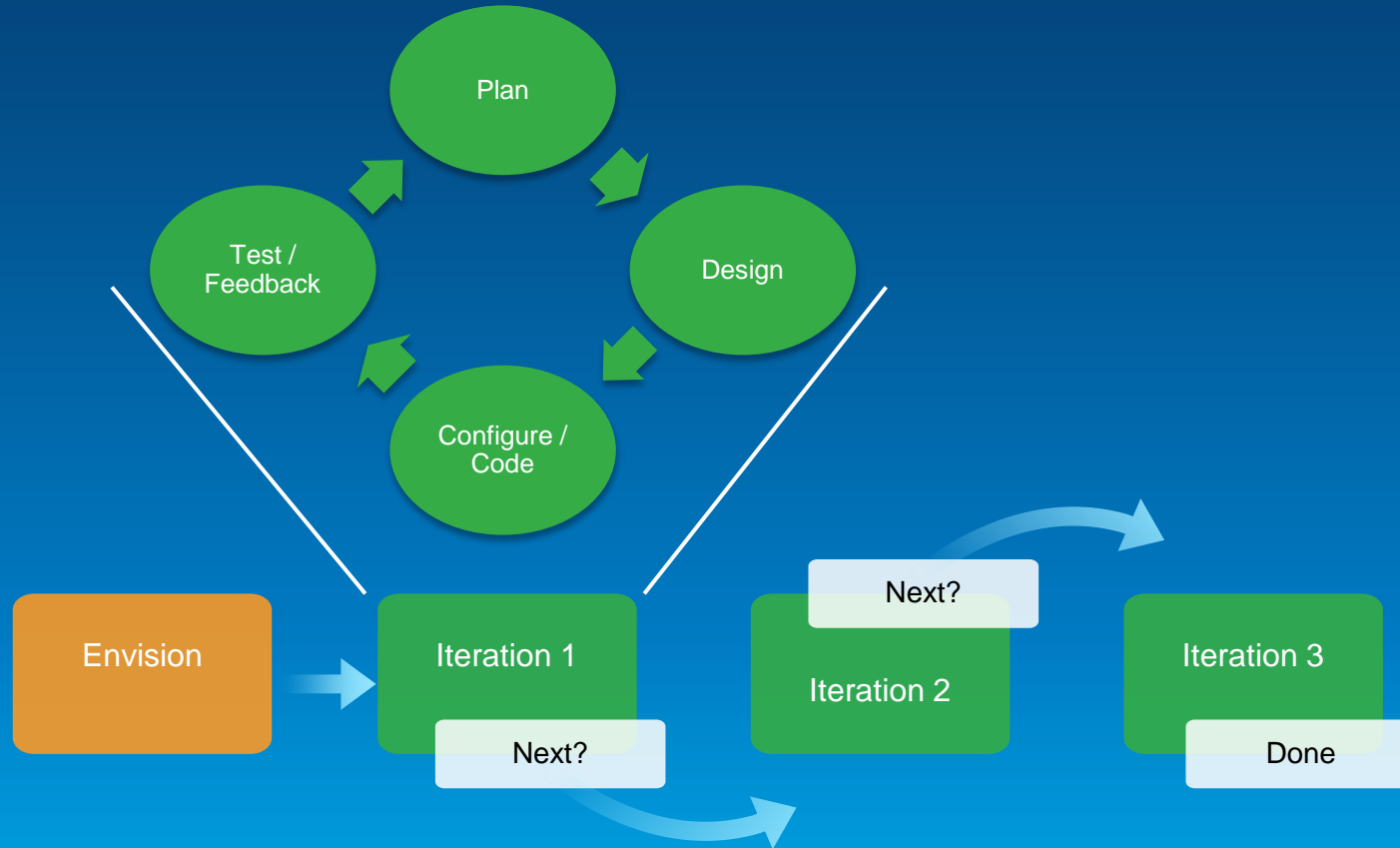
Report a Street Light
Public Outage Map
System Improvement

App Configurations Include

- **Instructions**
- **Application(if applicable)**
- **Information Model**
- **Any Necessary**
 - **Map documents**
 - **Web map configurations**
 - **Specification for services**

Utility Solutions are always evolving

Iterative and Incrementally Meeting Unique Needs



...Each iteration results in deliverables you can use

Service Lookup App

The screenshot displays a web application interface for a 'System Improvement Map'. At the top, there are two images of men wearing red hard hats and safety glasses. Below them is a search bar with the text 'Enter your address'. A popup window titled 'Service Information' is overlaid on the map, showing the following data:

- Last trimmed on: 2009
- Scheduled to be trimmed on: 2014
-
- Last time line was serviced: 2012
- Next scheduled maintenance: 2017

A green star icon is placed on the map, and a 'Zoom to' link is visible below the popup. The map shows a grid of streets including Avenue O, Avenue K, Avenue J, Avenue I, N 25th St, N 21st St, and N 20th St. The bottom of the page features a footer with three columns: 'About Mercator', 'Connect', and 'Communities', each with a list of links.

Service Lookup App

ArcGIS Online Web App Template

- **Hosted App in ArcGIS Online**
- **Source Code available on Github**
- **Used in the System Improvement, Gas Service Lookup and the Sewer Service Lookup Apps**
- **Designed to be embedded**
- **Uses location to present popup**
- **Multiple pop ups mashed up into one**

Web Trace App

The screenshot displays the Web Trace App interface. At the top, the browser address bar shows the URL `tryitlive.arcgis.com/watertace/`. Below the address bar is a search bar with the placeholder text "Enter your address". The main area is a map showing a water network with blue lines representing pipes and purple circular icons representing customers. A red outline highlights a specific area of the network. A summary panel at the bottom provides the following information:

- 35 Customers are affected by this outaged
- 4 Hydrants are affected by this outaged
- 3 Valves Returned in Trace, 0 were bypassed

At the bottom of the summary panel, there are four buttons: "Summary", "Isolating Valves", "Isolated Hydrants", and "Isolated Customers".

Trace App

ArcGIS Online style app

- **Hosted on-premises**
- **Source Code available on Github**
- **Used in the Water Isolation Trace, Illicit Trace, Gas Isolation Trace and the Protective Device Trace configurations**
- **Standalone app**
- **Uses one or more flags to trace the network**
- **Results present in user defined list**
- **Results saved to CSV or Feature Service**

Moving Information into and out of ArcGIS Online

```
fs.addFeatures(inputData)
print "Historical data updated"

#Update Current service if used
if createCurrent == "True":
    fs = layer.FeatureLayer(url=reportCurrentURL,username=username)
    fs.deleteFeatures(deleteSQL)
    print "Current service reset"
    fs.addFeatures(inputData)
    print "Current service updated"
```

```
except helper.HelperError,e:
    line, filename, synerror = helper.trace()
    print "error on line: %s" % line
    print "error in file name: %s" % filename
    print "with error message: %s" % synerror
    print "Add. Error Message: %s" % e
    print datetime.datetime.now().strftime("%Y-%m-%d %H:%M")
```

```
except arcpy.ExecuteError:
```

```
    line, filename, synerror = helper.trace()
    print "error on line: %s" % line
    print "error in file name: %s" % filename
    print "with error message: %s" % synerror
    print "ArcPy Error Message: %s" % arcpy.GetMessages(2)
    print datetime.datetime.now().strftime("%Y-%m-%d %H:%M")
```

```
except:
```

```
    line, filename, synerror = helper.trace()
    print ("error on line: %s" % line)
    print ("error in file name: %s" % filename)
    print ("with error message: %s" % synerror)
    print datetime.datetime.now().strftime("%Y-%m-%d %H:%M")
```

```
if __name__ == "__main__":
```

```
    env.overwriteOutput = True
    #Create the log file
    try:
        log = open(logfileName, 'a')
```

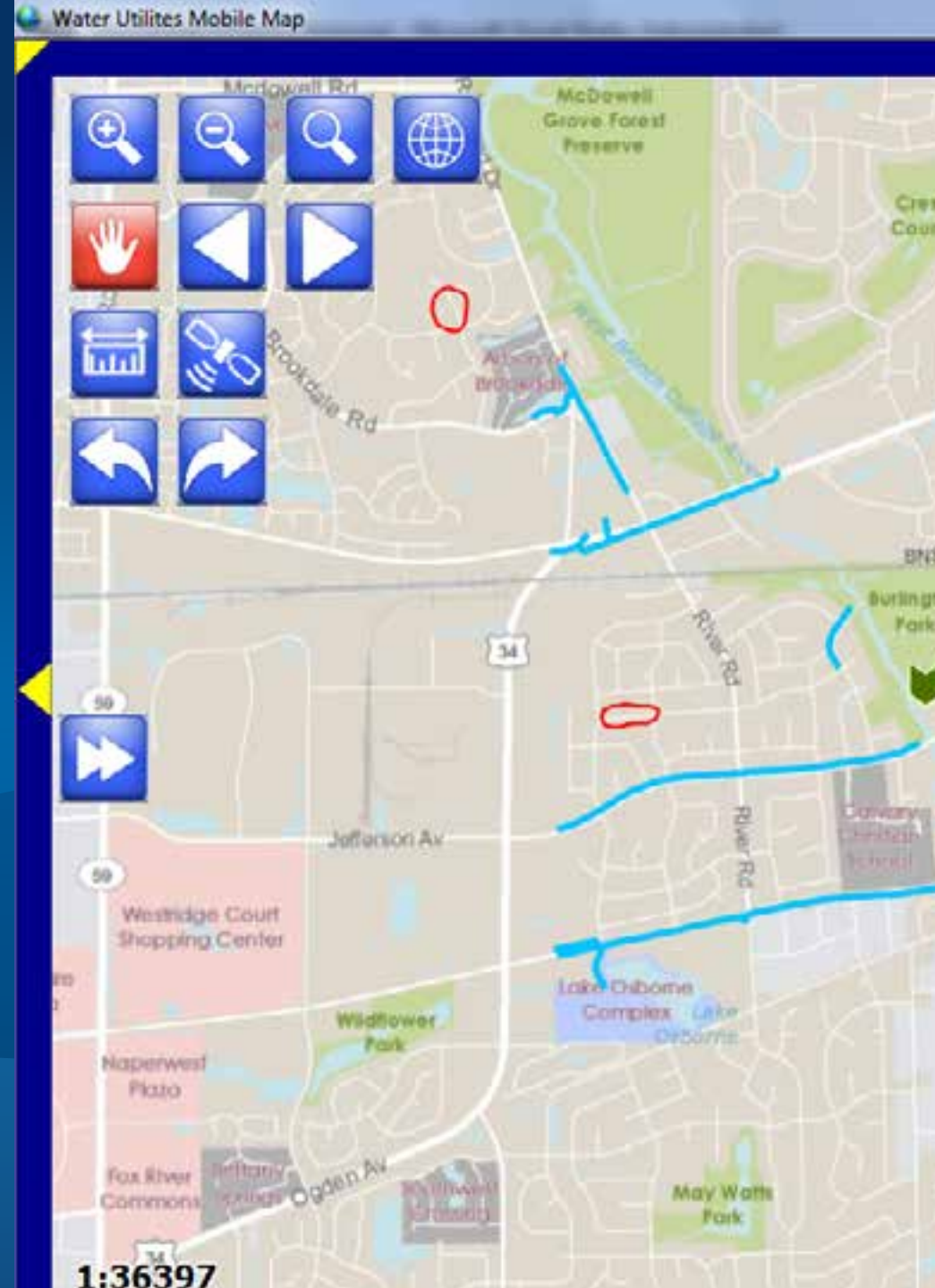
```
    except:
```

AGOL Python

Python Package for Feature Services

- **Package for working with Feature Services and Feature Layers**
- **Can be scheduled to move data to and from the cloud**
- **Simplifies working with Feature Services**
- **<https://github.com/Esri/agol-helper/>**

Mobile Map for windows tablets

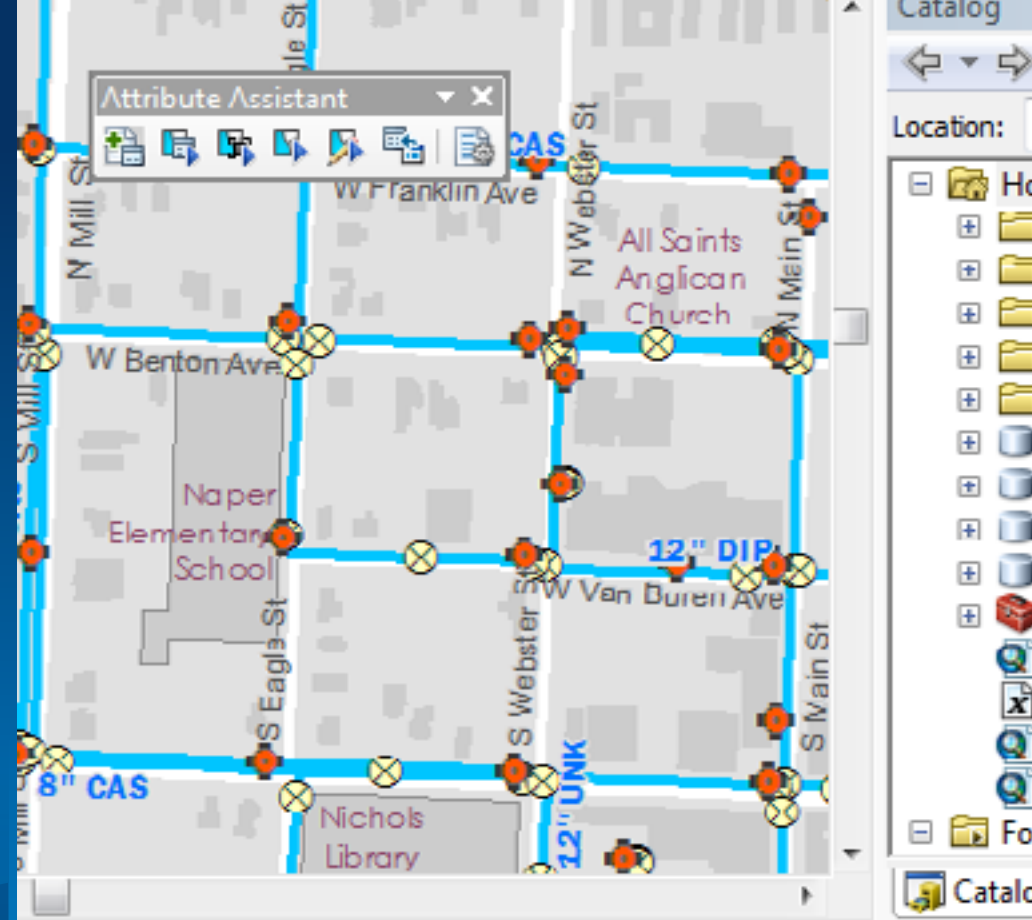


Mobile Map Template

ArcGIS for Windows Mobile based app

- **Designed for Utility Field Workers**
- **User Friendly Search Tools**
- **Data Driven Forms**
- **Simple Editing**

Attribute Assistant



Attribute Assistant

Editor Extension for ArcMap

- Automates attribute creation
- Large number of rules to pick from
- Greatly reduces button clicks and errors



The Community

The Utility Community

An online community where Utilities users and partners can collaborate

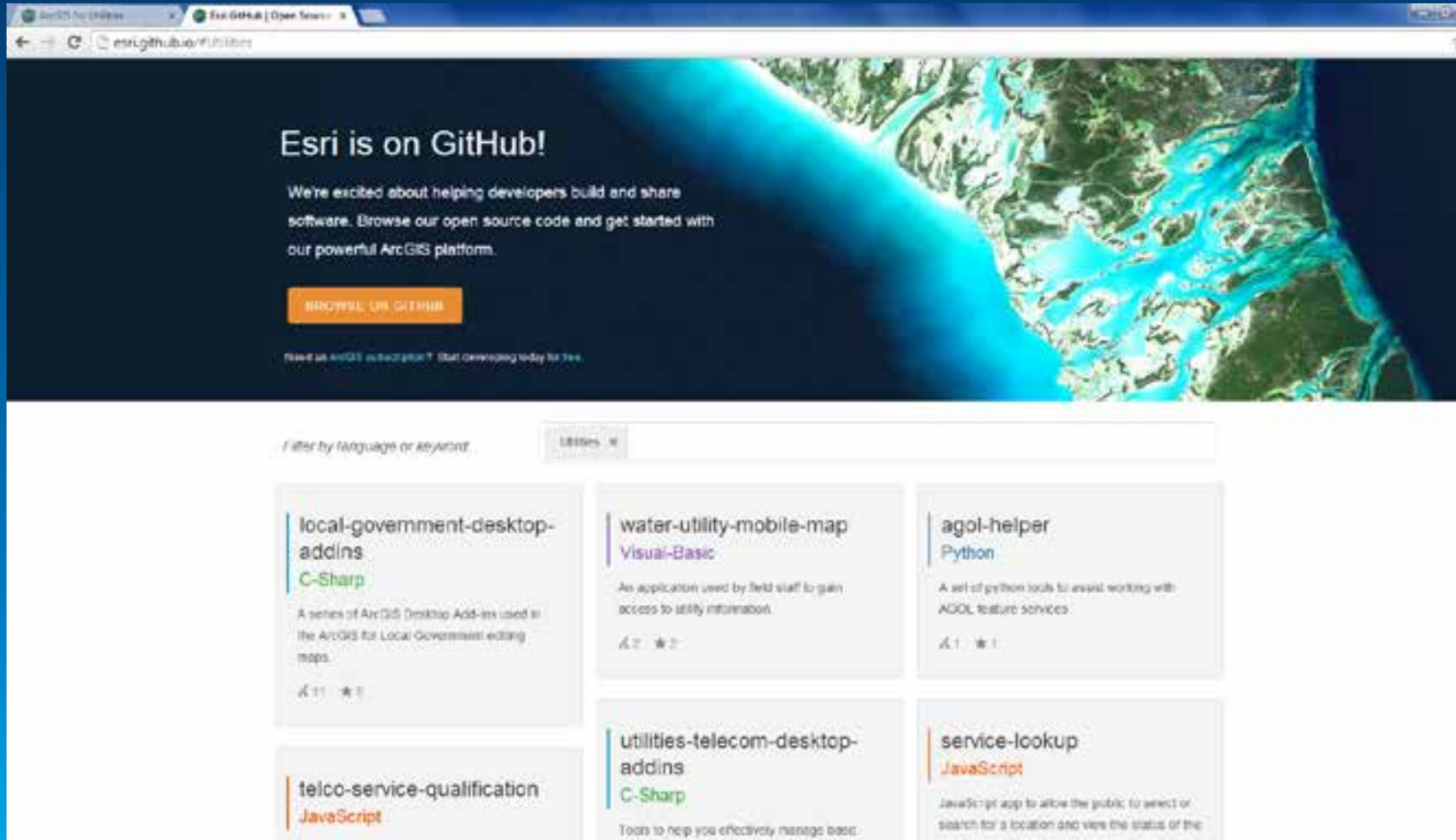
The screenshot shows the ArcGIS for Utilities website. At the top, there is a navigation bar with the text "ArcGIS for Utilities" and links for "PLATFORM", "FEATURES", "DOCUMENTATION", and "SUPPORT". The Esri logo is in the top right corner. The main heading is "Mapping Solution for Your Utility", with a subtext: "A configuration of the ArcGIS Platform that quickly deploys maps and apps to solve specific business problems." Below this are two buttons: "TAKE A TOUR" and "FOLLOW US". The central image shows a laptop, a smartphone, and a tablet displaying various utility maps, including one titled "Outages" and another "Sanitary Sewer Network". Below this image are three columns of content:

- Get Started in Your Organization**: Learn how ArcGIS for Water, Electric, and Gas can transform your use of GIS, help you increase efficiency, and improve customer relations.
- Deploy Focused Maps and Apps**: Browse a collection of maps and apps that can be configured for knowledge workers in your organization and the citizens you serve.
- Join the Community**: Connect with your peers, Esri partners, and the teams at Esri that are dedicated to help you increase the value of GIS in your organization.

Below these columns is a section titled "Water Utilities" with the text: "Focused maps and apps that help you leverage your geographic information with the ArcGIS Platform to improve utility operations and enhance customer services." This section includes a collage of utility maps and data visualizations.

The Utility Community

There's a place where developers can contribute too



The screenshot shows the Esri GitHub repository page. At the top, there's a banner with the text "Esri is on GitHub!" and a sub-header "We're excited about helping developers build and share software. Browse our open source code and get started with our powerful ArcGIS platform." Below this is an orange button labeled "BROWSE ON GITHUB".

Below the banner, there's a search bar with the text "Filter by language or keyword" and a dropdown menu showing "Languages".

The main content area displays a grid of repository cards:

- local-government-desktop-addins** (C-Sharp): A series of ArcGIS Desktop Add-ins used in the ArcGIS for Local Government editing maps. 11 forks, 1 star.
- water-utility-mobile-map** (Visual-Basic): An application used by field staff to gain access to utility information. 2 forks, 2 stars.
- agol-helper** (Python): A set of python tools to assist working with AGOL feature services. 1 fork, 1 star.
- telco-service-qualification** (JavaScript): Tools to help you effectively manage base. 0 forks, 0 stars.
- utilities-telecom-desktop-addins** (C-Sharp): Tools to help you effectively manage base. 0 forks, 0 stars.
- service-lookup** (JavaScript): JavaScript app to allow the public to select or search for a location and view the status of the. 0 forks, 0 stars.



Thank You



<http://solutions.arcgis.com>



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<http://esri.github.io/#Utilities>



Understanding our world.