

BUS STOP PROJECT TRACKER

USING ESRI APPS TO COLLABORATE
ACROSS DEPARTMENTS

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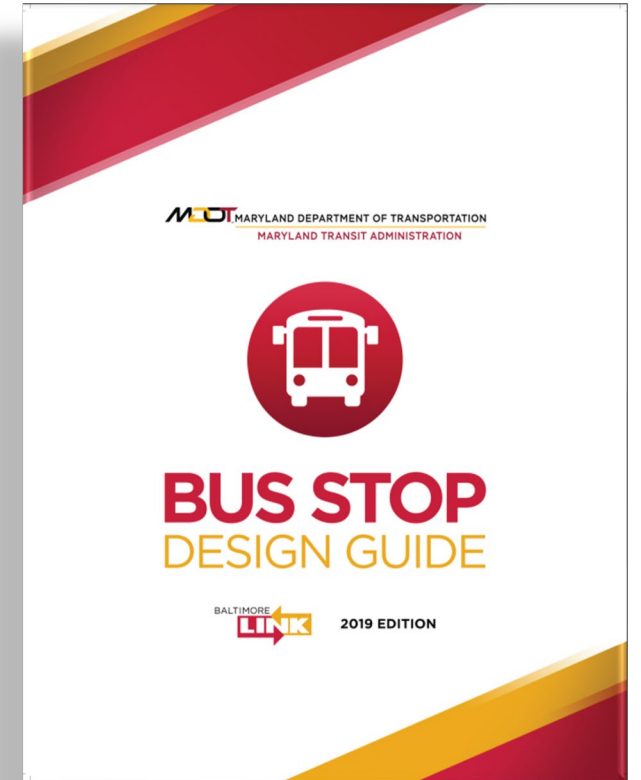
Transportation Planner

Foursquare Integrated
Transportation Planning

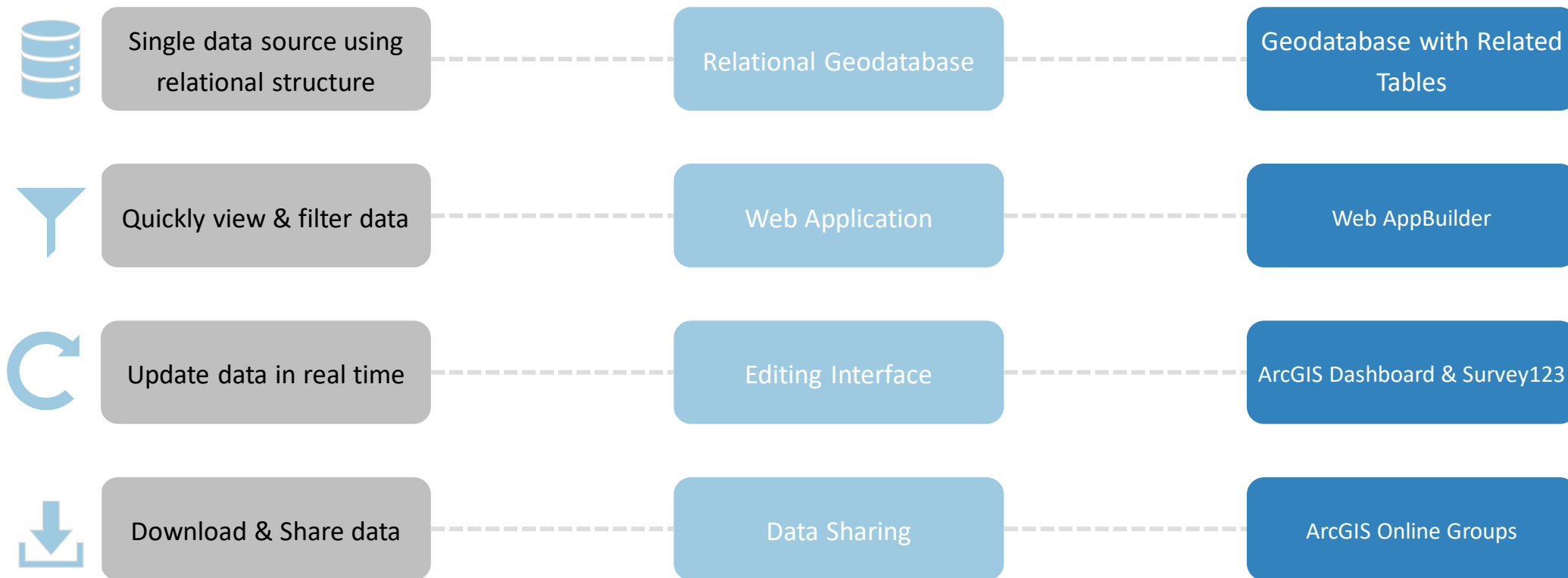
jhopkins@foursquareitp.com

PROJECT BACKGROUND

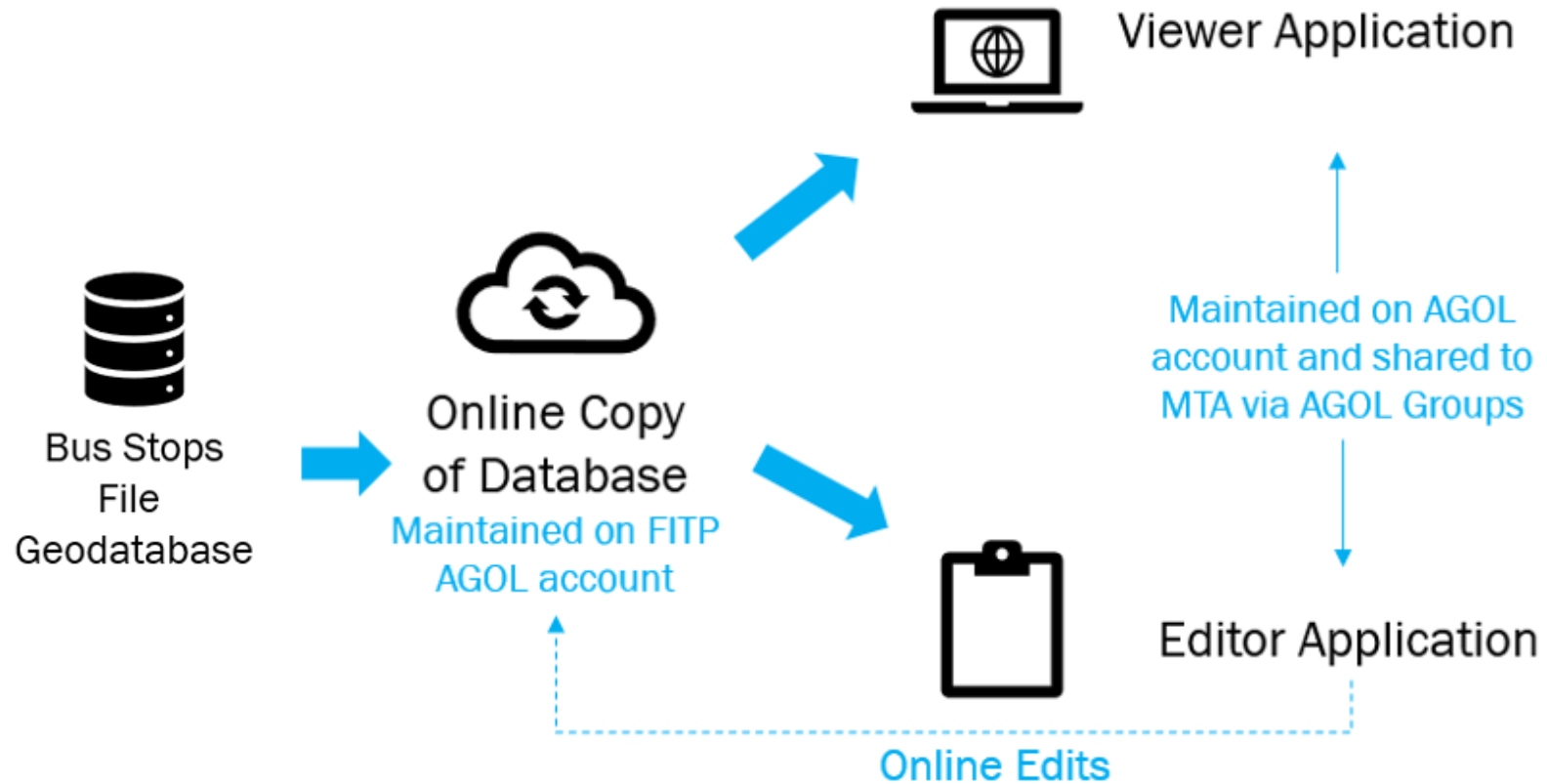
- BaltimoreLink System Redesign (June 2017)
 - Stop Optimization
- Bus Stop Accessibility Survey
- Bus Stop Design Guide (2019)
- Multiple Projects, Multiple Departments



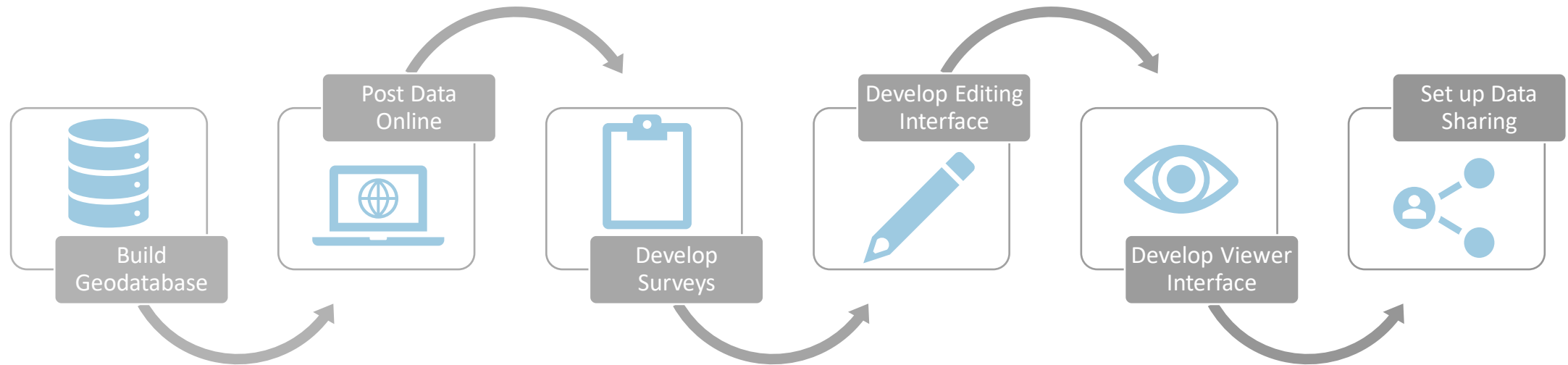
CLIENT NEEDS & SOLUTIONS

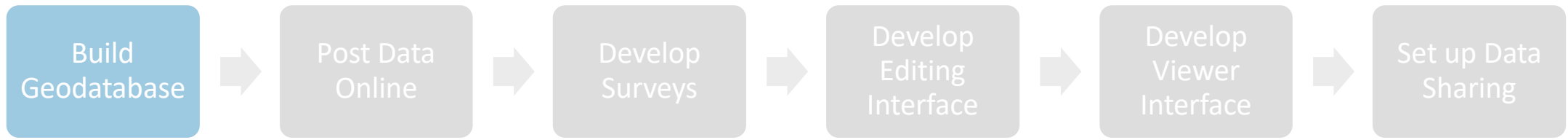


DATA STRUCTURE



DEVELOPMENT WORKFLOW

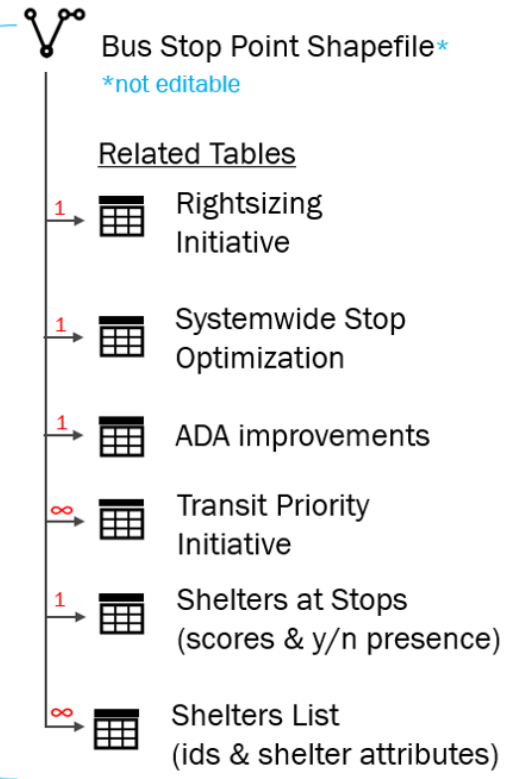


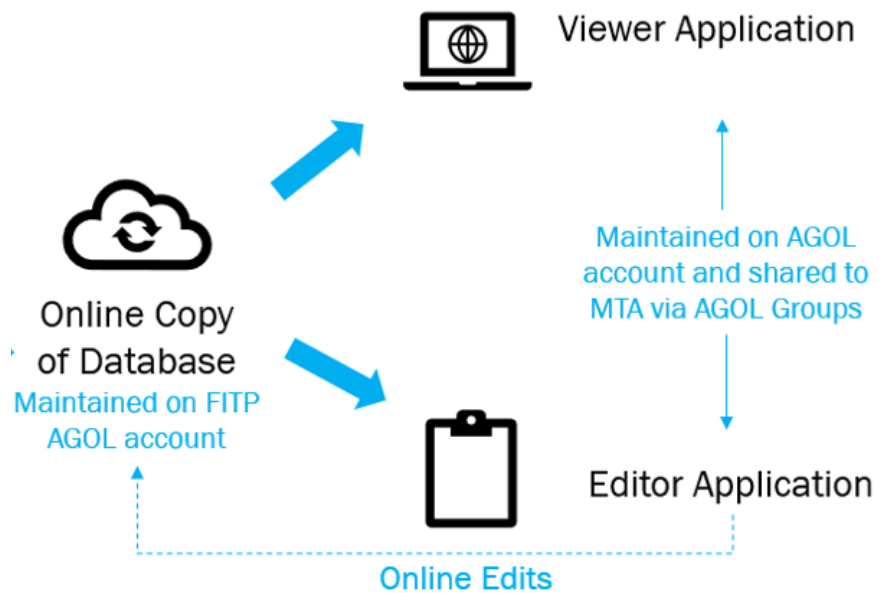
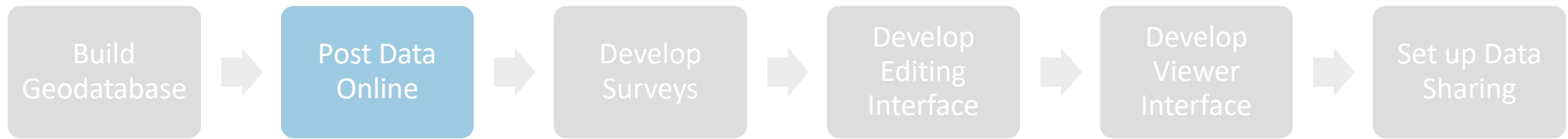


Build Geodatabase

- **Parent Layer (Bus Stops)**
 - **Child tables** for each project related with Global ID's
 - Related via relationship classes stored in gdbase
- Defined domains and value formats for all possible fields

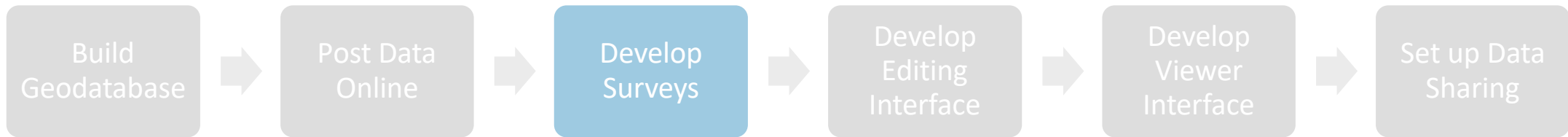
Domain Name	Description	Field Type	Domain Type	Split Policy	Merge Policy
ActiveInactive	Active/Inactive	Text	Coded Value Domain	Default	Default
ADACompliance	ADA Compliance	Text	Coded Value Domain	Default	Default
ADAUpgradeStatus	ADA Upgrade Status	Text	Coded Value Domain	Default	Default
BaltoCoCouncilDistrict	Baltimore County Council District	Text	Coded Value Domain	Default	Default
BenchCondition	Condition of bench in shelter	Text	Coded Value Domain	Default	Default
BoardingObstruction	Boarding/Alighting Obstruction	Text	Coded Value Domain	Default	Default
BusStopTiers	Bus stop tiers/hierarchy	Text	Coded Value Domain	Default	Default
CityCouncilDistrict	City Council District	Text	Coded Value Domain	Default	Default
Condition	Condition of bus pad, bench, etc.	Text	Coded Value Domain	Default	Default
CrossStreetLocation	Bus Stop Cross Street Location	Text	Coded Value Domain	Default	Default
CrosswalkLocation	Crosswalk Location	Text	Coded Value Domain	Default	Default
Detail	ADA Typical Detail	Text	Coded Value Domain	Default	Default
Direction	NB/SB/EB/WB	Text	Coded Value Domain	Default	Default
Feasibility	Feasibility	Text	Coded Value Domain	Default	Default
HoCoCouncilDistrict	Howard County Council District	Text	Coded Value Domain	Default	Default
LaneType	Lane type	Text	Coded Value Domain	Default	Default
LegislativeDistrict	Legislative District	Text	Coded Value Domain	Default	Default
Level	ADA Level of Upgrade	Text	Coded Value Domain	Default	Default
MissUtility	Miss Utility Status	Text	Coded Value Domain	Default	Default
OptRationale	Rationale for Stop Optimization	Text	Coded Value Domain	Default	Default
OptStatus	Status of Optimization	Text	Coded Value Domain	Default	Default
OptType	Type of Optimization	Text	Coded Value Domain	Default	Default
OtherServiceSign	Other services listed on bus stop sign	Text	Coded Value Domain	Default	Default
PriorityTier	Rightsizing priority tier	Text	Coded Value Domain	Default	Default
PropLetters	Property Notification Status	Text	Coded Value Domain	Default	Default
RiderNotices	Rider Notice Status	Text	Coded Value Domain	Default	Default
RightsizingStatus	Rightsizing status	Text	Coded Value Domain	Default	Default
SharedSignType	Shared sign type	Text	Coded Value Domain	Default	Default
ShelterCondition	Shelter Condition	Text	Coded Value Domain	Default	Default
ShelterElectricity	Shelter Electricity	Text	Coded Value Domain	Default	Default
ShelterInspectingFirm	Shelter Inspecting Firm	Text	Coded Value Domain	Default	Default
ShelterInspectionStatus	Shelter Inspection Status	Text	Coded Value Domain	Default	Default
ShelterOwner	Shelter Owner	Text	Coded Value Domain	Default	Default
ShelterScoreStatus	Shelter score status	Text	Coded Value Domain	Default	Default
ShelterType	Shelter Type	Text	Coded Value Domain	Default	Default
SignArrowDirection	Bus stop sign arrow direction	Text	Coded Value Domain	Default	Default
SignDamageType	Sign damage type	Text	Coded Value Domain	Default	Default





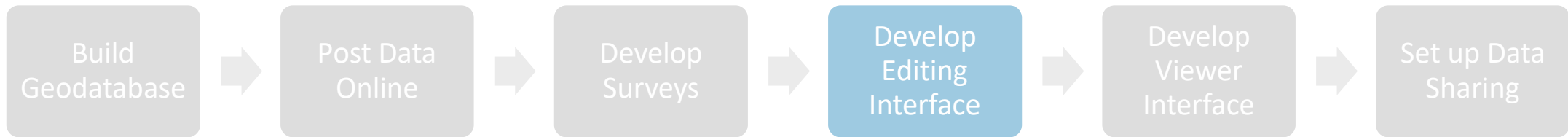
Post Data Online

- ArcGIS Online editable web layer
 - Update attributes
 - Supports applyEdits with GlobalIDs
- Design Web Map to use as base for editing and viewing interfaces



Develop Surveys

- Use Survey123 Connect to create surveys based on web layer schema
- Configure the survey's XLS form as needed to configure question types, calculations, constraints/constraint messages, default answers, etc.
- Editor Tracking



MTA Bus Stop Project Editor
Select a stop, view related projects, and update data.

Select a Stop ID:

Use this dashboard to keep track of Rightsizing, Stop Optimization, Shelter, ADA Improvement, and TPI projects associated with each bus stop in the MTA system. Filter by Stop ID to review each stop in the detail tabs below.

View existing attributes below:

Stop ID	1
Stop Name	CYLBURN AVE & GREENSPRING AVE fs wb
Status	Active
Routes Served	31, 91, 94
On Street	CYLBURN AVE
Cross Street	GREENSPRING AVE
Cross Street Relation	NS
Lane Type	Parking Lane
Sign Present with Routes	Yes
Bus Stop Sign Location	Front of Stop
Sign in Pedestrian Path	No
Sign Condition	Functional
Sign Damage Type	
Sign Mount	Sign Post
Sign Mount Correct	No
Shared Sign	No
Shared Sign Type	
Sign Post Condition	Functional
Sign Viability Obstruction	No
Non MTA Services	No
Other Service	
Info Box	Yes
Sign Decal	No

1 of 50

City of Baltimore, Baltimore County Government, VITA, Esri, HERE, Garmin, USGS, EPA, NPS | Esri, HERE, NPS

Powered by Esri

3,893 Active Bus Stops

367 Existing Shelters

1,294 Stops to be Rightsized

1 Stops to be Optimized

Edit the data below:

Use the arrows at the bottom of the pane to navigate to the correct survey. Delete pre-populated values in the survey to see all available options. Only editable fields are included in the survey. You must submit a survey to save your changes.

1 of 50

Jennifer

Stop ID:

Stop Type: In-Lane Pull-Out

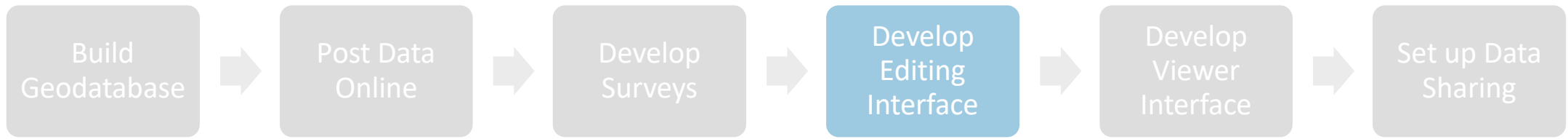
Rightsizing Status:

Rightsizing Priority Rank:

Rightizing Initiative

Develop Editing Interface

- Create ArcGIS Dashboard with necessary elements
- Add Survey123 forms as embedded content
- Dashboard category selector filters all data in dashboard, including survey forms



Develop Editing Interface

- Edit URL parameters of embedded Survey123 forms to allow filtering and editing
 - Turn on editing
 - Assign unique ID
 - Hide fields (as needed)

MTA Bus Stop Project Editor

Data options

Show data table

Type: Static Features

Layer: ADA Improvements

Change

88f2e0c8?mode=edit&globalId={GlobalID}&hide=field:StopName,field:RampPresent

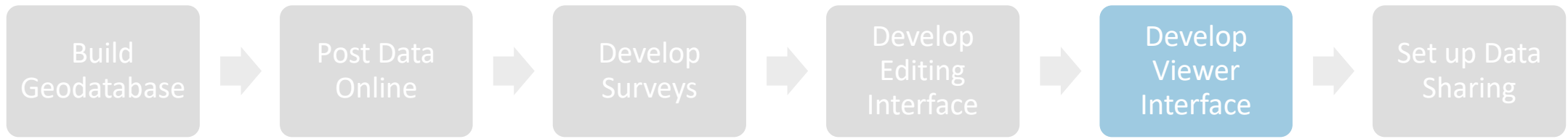
Content type: Document image video

URL: 88f2e0c8?mode=edit&globalId={GlobalID}&hide=field:StopName,field:RampPresent

Fields: {}

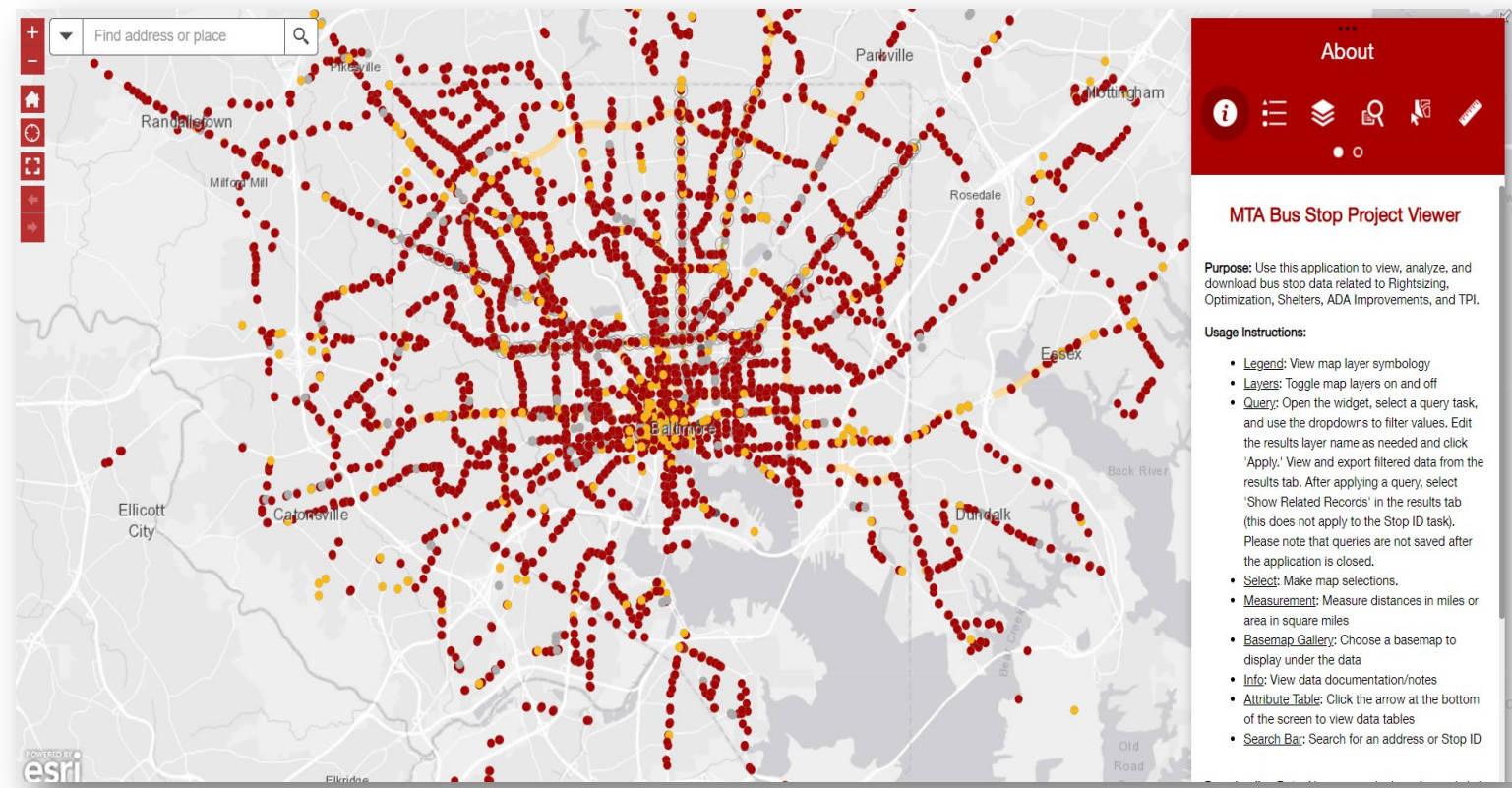
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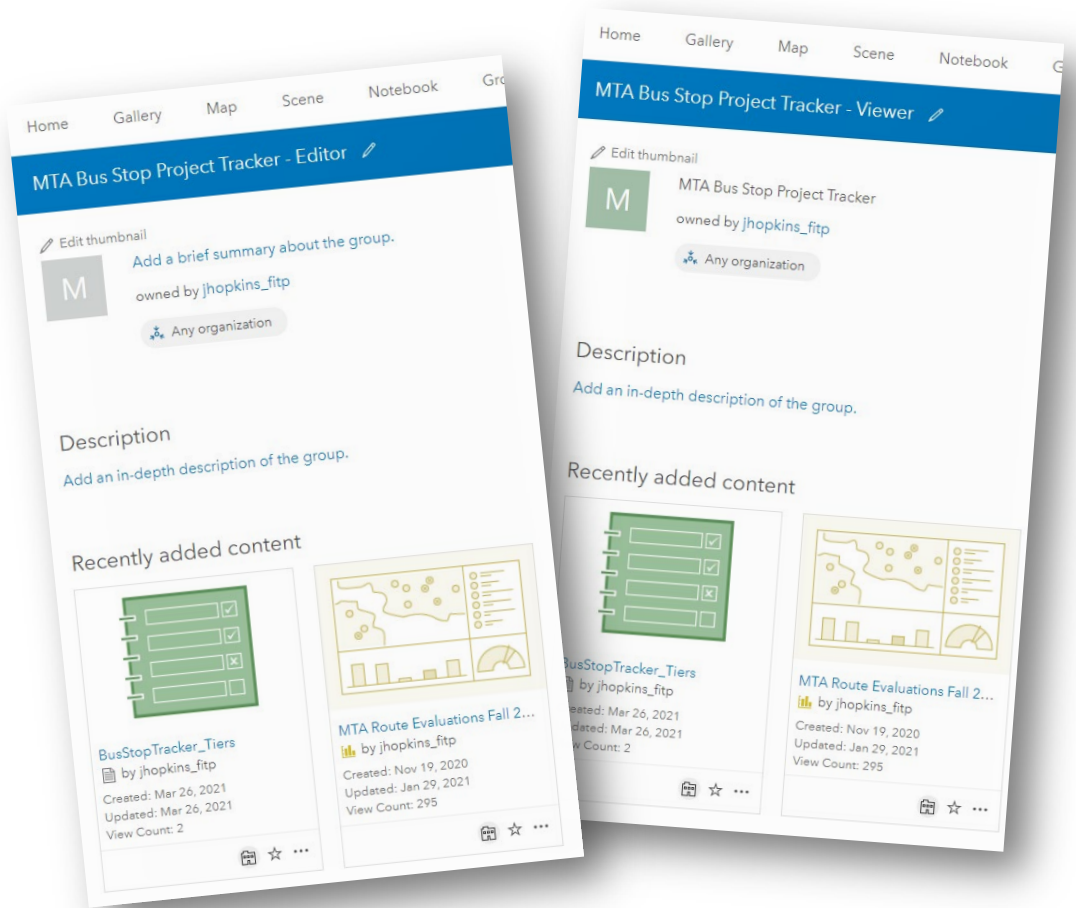
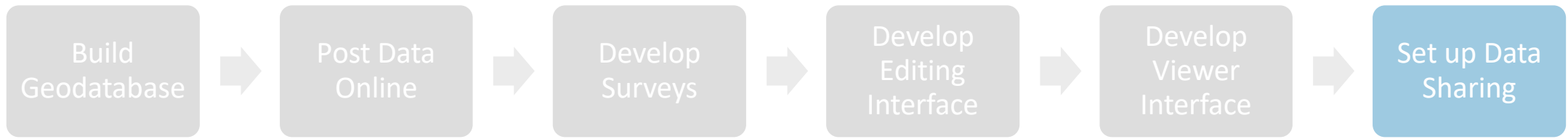
Sort by: Add field



Develop Viewer Interface

- ArcGIS Web AppBuilder
- Built off same web map and web layers as editing interface
- Add widgets to support client needs (filters, related tables, export data, etc.)





Set up Data Sharing

- ArcGIS Online Groups (*multiple organizations*)
 - Editing Group
 - Viewing Group
- Data download options are available for users in viewer interface
- Weekly data downloads scheduled in ArcGIS Pro for archival purposes

DEMO

IMPROVEMENTS

- Data Accessibility
- Bigger Picture of the Needs of a Bus Stop
- Facilitate Communications and Collaboration
- Flexibility to Expand
- Assists in Prioritizing Projects

QUESTIONS? CONTACT US!



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THANK YOU